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ANUARY, 1955

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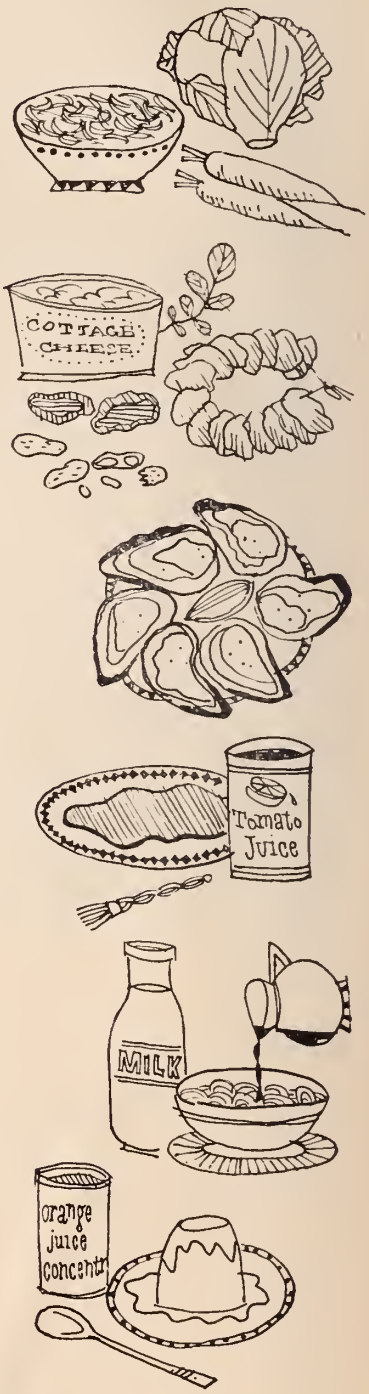
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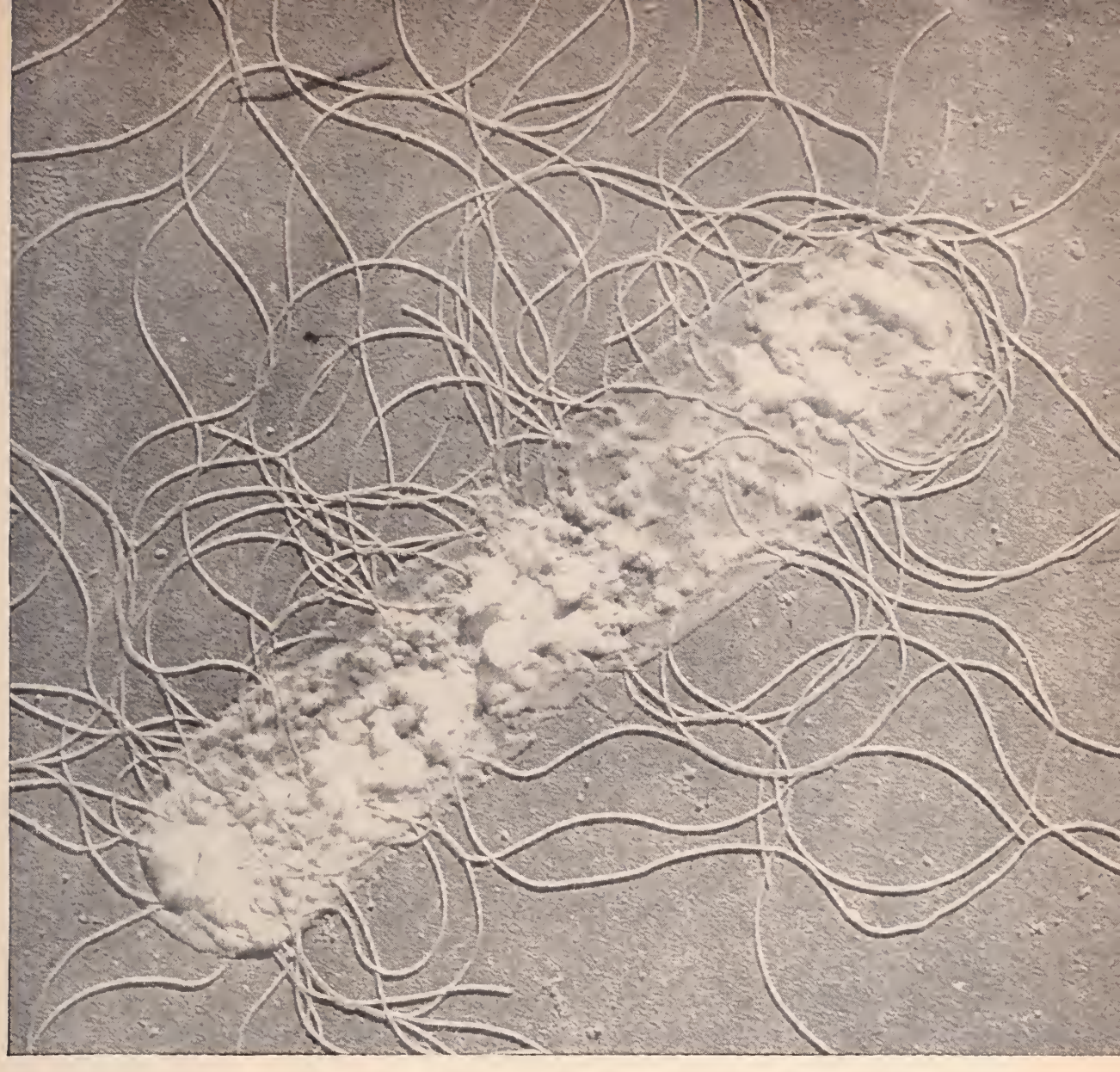
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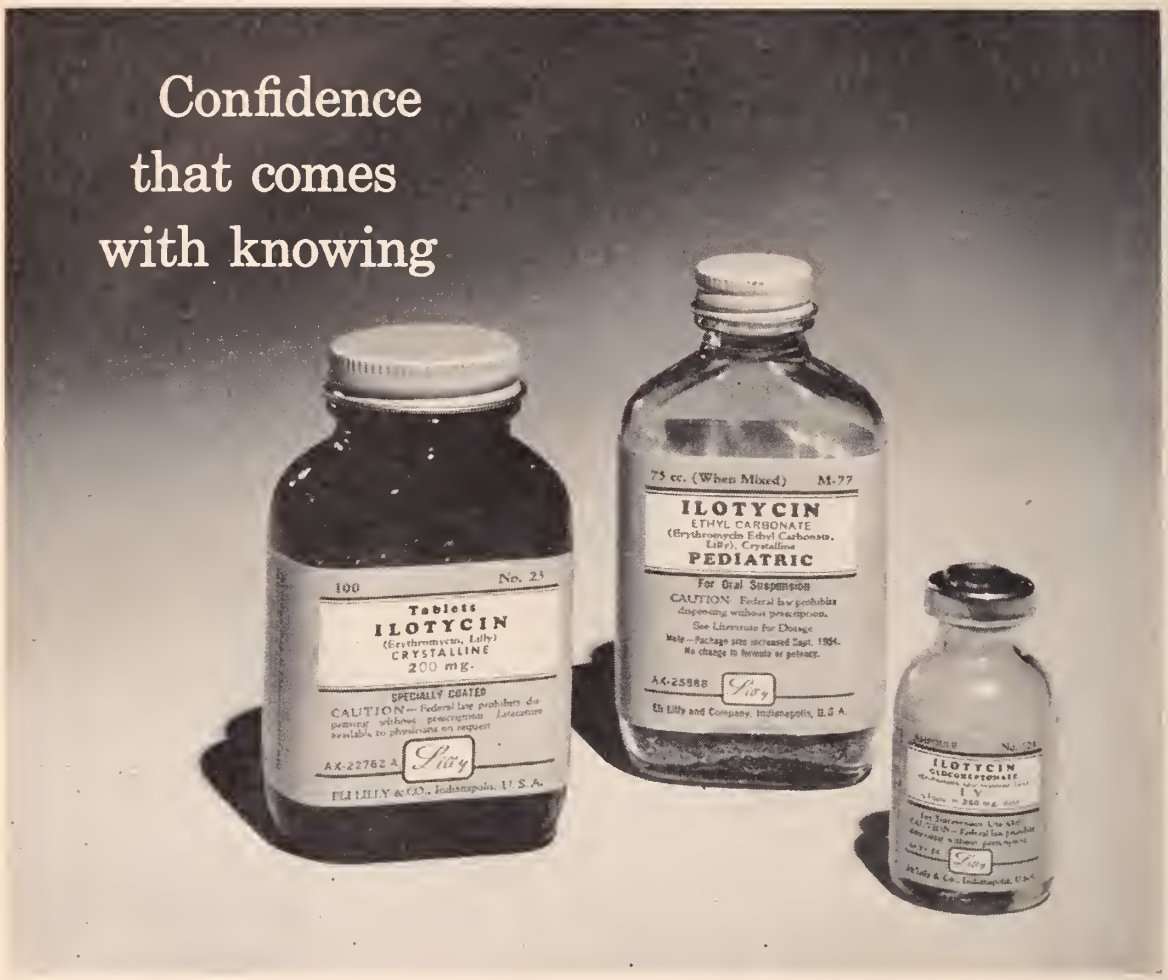
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JANUARY, 1955

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PULMONARY HISTOPLASMOSIS * †

JOHN W. MIDDLETON, M. D.
GALVESTON, TEXAS

In 1944, Conant stated: "Histoplasmosis rarely has been recognized before autopsy." One of the outstanding advances in medicine since then has been the recognition of the more benign forms of the disease. There have been many reports on the subject, too extensive to review in detail. The infection has a primary pulmonary phase, which may progress into a chronic pulmonary disease or a disseminated infection, or may largely heal without significant damage. While not an extremely common disease in our area, the pulmonary phases constitute a problem in differential diagnosis, and histoplasmosis is being diagnosed with greater frequency.

The disease is endemic over a large area, the Mississippi basin region,[2] and has occurred in epidemics.[3a,b,c,d,e] It is caused by inhalation of *Histoplasma capsulatum* from an exogenous source in nature.[4] The organism has been found in soil around farm outbuildings, chicken coops, a storm cellar, caves and attics, and has been associated with bird and animal droppings.[3d,e] There are no reported instances of person to person transmission; careful observation of open cases has not shown any evidence of spreading by this means. Prolonged contact with animals known to be infected has not resulted in human infection.[5]

The primary pulmonary phase is asymptomatic in 95 per cent of the cases. Here the diagnosis is usually retrospective, based on multiple pulmonary calcification and a positive histoplasmin and a negative tuberculin reaction.[6] Some patients, typified by case No. 1, are found to have localized pulmonary infiltrations without symptoms or physical signs. In a few instances *H. capsulatum* has been isolated from the sputum or gastric washings of asymptomatic cases.

Case No. 1.—P. S., age 13, white male. The patient was asymptomatic, having been referred to Dr. A. N. Longfield, in October 1953, because of an infiltration in the right upper lung field. He had visited in the vicinity of Hopkinsville, Kentucky, for two weeks in the summer of 1953. He had also visited areas of southwest Texas and central Oklahoma. Physical examination was normal in all respects. Blastomycin, coccidioidin and tuberculin skin tests were negative. Histoplasmin 1:1000 produced an area of induration 4 centimeters in diameter. Histoplasma complement fixation tests, performed by the Texas Department of Health Laboratories and checked by the United States Public Health Service Laboratories were positive in a dilution of 1:640. Repeat x-ray examination on November 20, 1953, showed marked clearing of the infiltration with still more clearing on December 13, 1953. On April 22, 1954, there was still a slight fibrotic residual with no other abnormality noted. Complement fixation was negative. The patient had continued to be asymptomatic.

Symptomatic pulmonary infection is marked by a sudden onset (after an eight to eighteen day incubation period in the epidemics) with malaise, fatigue, and muscular aching, followed in twenty-four

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* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

† From the Department of Internal Medicine, University of Texas, Medical Branch, Galveston, Texas.

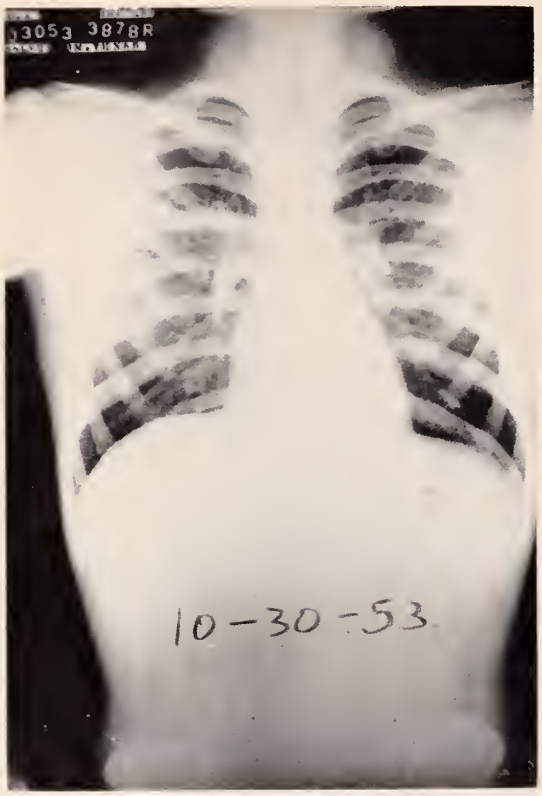


Figure 1. Case No. 1, infiltration right second anterior interspace.



Figure 2. Case No. 1, infiltrate clearing.



Figure 3. Case No. 1, slight fibrotic residual six months later.

to thirty-six hours by a chill or chilliness, remittent fever, sweating, and constricting chest pain.[3a] Cough is not a major symptom, but 75 per cent of patients in a large series had a cough of some degree.

Physical findings are variable and nonspecific. X-ray examination at first may be negative, followed by rapid development of extensive bilateral involvement. The lesions range from fine mottled infiltrations to soft miliary nodules.[6]

The course of the disease is inconstant, but in the epidemics already cited, acute symptoms lasted four weeks to three months, and some disability persisted for a much longer period.

The residual pulmonary lesion usually thought of as "typical" consists of fine scattered calcific nodules. At times, however, lesions may remain that are clinically and roentgenographically indistinguishable from tuberculosis or carcinoma.[7]

A chronic, active pulmonary form has recently been described[8a,b] and case No. 3 is an example of this type.

The diagnosis of the active pulmonary process can be established by smear and culture of the sputum or gastric aspiration, biopsy, animal inoculation, skin tests, and serologic studies.[4,9a,b,c] The sputum should be fresh for satisfactory cultures.[9a] Histoplasmin shows cross sensitivity with blastomycin and coccidioidin; it is emphasized that skin tests should be done with all three antigens at the same time for reliable results.

Serologic studies are of help not only in the diagnosis but also are considered to have prognostic significance. In general, the antibody titer rises to a peak in the second or third week and then gradually falls off over a period of four to eight months.[4] Early in the disease a low antibody response is thought to indicate a poor prognosis, and a high titer, a good prognosis.

The prognosis is excellent in most cases of primary histoplasmosis but very grave if dissemination occurs.

Treatment varies with the clinical form. The asymptomatic cases usually require no treatment even if recognized. Resection has been employed in some instances of localized pulmonary disease.[7,10a,b] The aromatic diamidines (stilbamidine and propamidine) have been tried in the disseminated form, with questionable results.[11a,b] Ethyl vanillate has given good results in some instances.[11b,12] We have had a good response to the latter drug in two cases, failure in several others.

Case No. 2 is an example of primary symptomatic histoplasmosis: T. G., age 39, white male, was admitted to John Sealy Hospital August 12, 1953, with a history of five weeks' illness, marked by fatigue, cough, chest pain, and fever. Chest x-rays a short time before the onset were normal. The patient had not been away from the area of Baytown, Texas, for many years. He had raised chickens at home; his history did not otherwise suggest a source of the infection. All skin tests were negative. Scalene node and sternal marrow biopsies were negative. Sputum cultures were reported positive for *H. capsulatum* after the patient had been discharged at his own request on September 10, 1953. (Histoplasmin skin tests on all three of the patient's children were positive).

He was readmitted, gravely ill, on September 24, 1953. Although ethyl vanillate had not been advocated for the primary pulmonary disease, it



Figure 4. Case No. 2, normal x-ray one year before onset of symptoms.

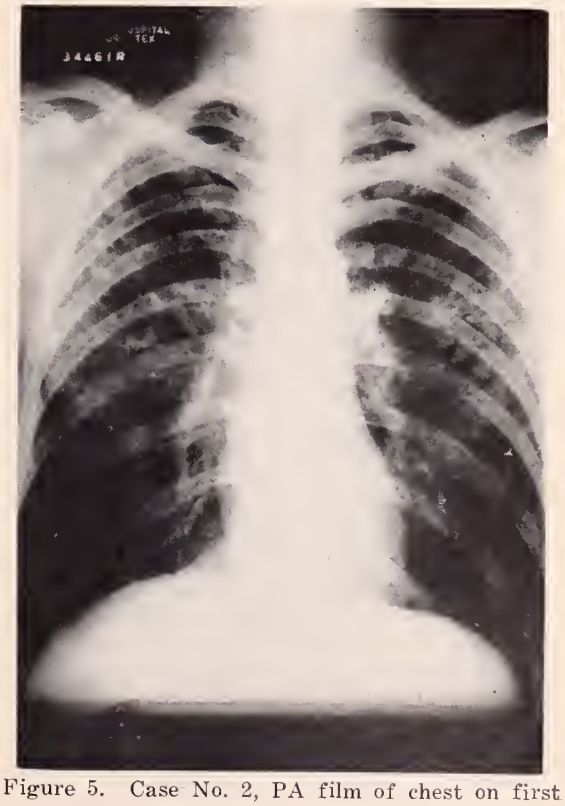


Figure 5. Case No. 2, PA film of chest on first admission, Aug. 22, 1953.



Figure 6. Case No. 2, lateral x-ray.

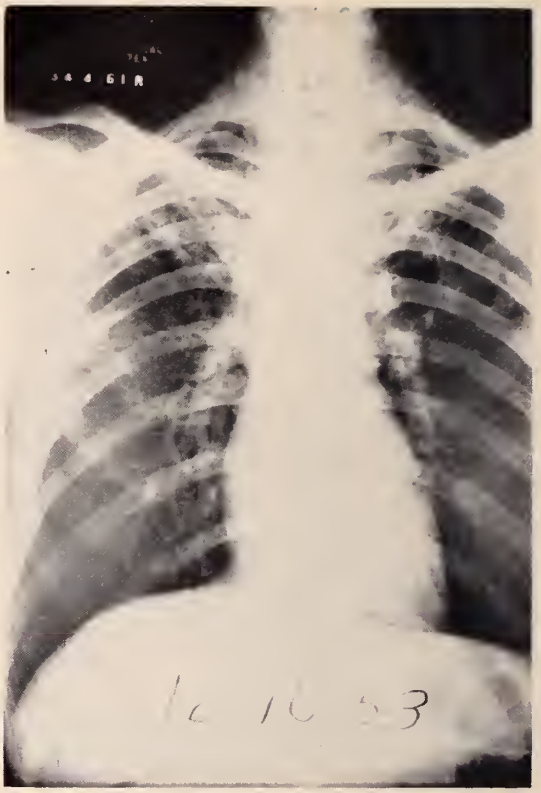


Figure 8. Case No. 2, December 16, 1953.



Figure 7. Case No. 2, November 2, 1953.

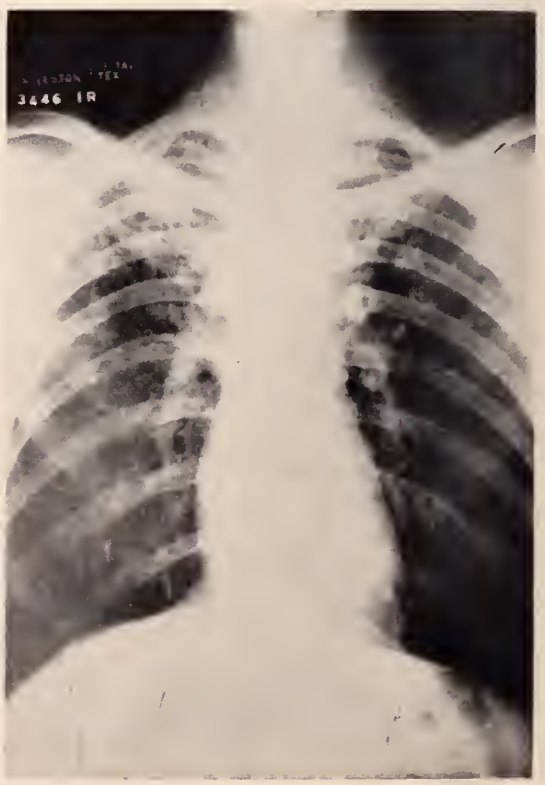


Figure 9. Case No. 2, January 5, 1954.

was decided to give it to this patient. There was no response initially, but after increasing the dose sufficiently to attain a blood level of about 10 mgm./100 cc, he began to improve and his temperature returned to normal. He again insisted on leaving the hospital, and when last seen as an out-patient, in January 1954, still had extensive pulmonary infiltration.

It is impossible to evaluate the effects of ethyl vanillate on the primary pulmonary disease from this single case, but it seems that further trial is justified in the very ill patient.

Case No. 3 appears to be an example of the chronic pulmonary form: M. McC., age 64, white male, was referred to John Sealy Hospital as a case of severe bilateral upper lobe bronchiectasis, proven by bronchography. Because of the x-ray appearance this patient had been repeatedly suspected of pulmonary tuberculosis, and when no acid-fast bacilli were found, was frequently called

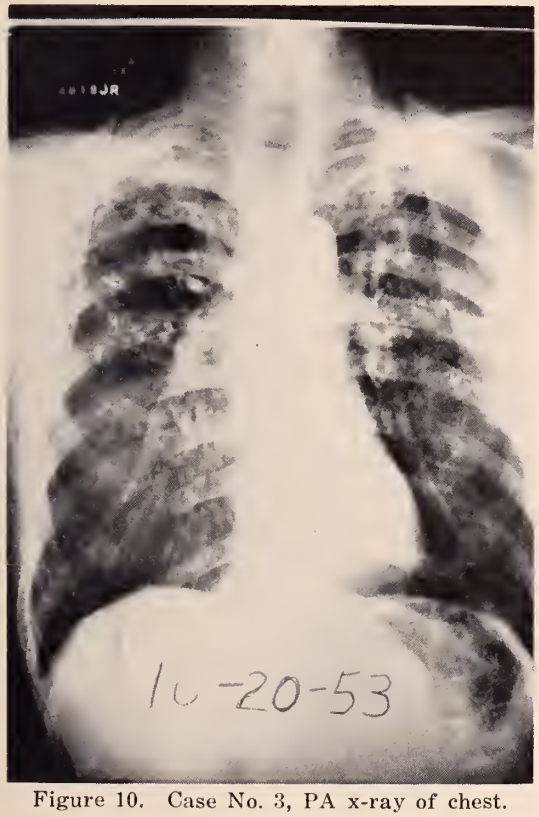


Figure 10. Case No. 3, PA x-ray of chest.

a "burnt-out TB". Several sputum cultures were positive at our hospital for *H. capsulatum*. Repeated efforts to get him to return to the clinic have been unsuccessful.

SUMMARY

Histoplasmosis of the lung is one of the new problems in pulmonary diseases. In the primary form, it may be asymptomatic with the diagnosis usually retrospective; in the infrequent patient with symptoms, diagnosis and treatment may be a problem. That there is a chronic pulmonary form has only recently been recognized.

Two previously unreported cases of pulmonary histoplasmosis, proven by culture, have been included in the discussion.

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CHANGING CONCEPTS IN SURGERY OF THE EXTERNAL NASAL PYRAMID *

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Surgery of the external nasal pyramid as presented in the splendid textbook of Joseph is commonly referred to as rhinoplasty, or plastic surgery of the nose. The chief concepts of this surgery as he described them have not undergone essential alteration; cosmetic, anatomical corrections have been the objectives. Many have added variations and refinements, and even improvements in technique, but the general principles involved remained the same. During the last several years, however, there has been a trend to talk about correction of nasal deformities on a basis of function. Physiology has been called upon to provide additional reasons for performing these operations. This approach is right, but I believe that we have not known enough about the structure and function of the external nasal pyramid to warrant the assumption that the surgical indications thus formulated were completely justified.

Several categories of surgeons do rhinoplasty. First, there is the great group of plastic surgeons who are involved in corrective and reparative nasal surgery as a part of an overall interest in general plastic surgery. Second, there is the group of otolaryngologists who through their interest in nasal surgery have gradually taken on plastic surgery problems of the neighboring structures. Some of these men have eventually gone into the general plastic surgery field. Third, throughout the world there are oral surgeons, dermatologists, general surgeons, and general practitioners who do surgery of the external nasal pyramid. These surgeons operate chiefly for comestic indications. The average American otolaryngologist who is interested in rhinologic surgery would like to concern himself with this field but is not primarily interested in general plastic surgery, or in cosmetic surgery of the nose for itself alone. For him and his hundreds of colleagues a broad concept of nasal anatomy, physiology, and diagnosis is needed to have them take over seriously the medical and surgical treatment of dysfunction and deformities of the external nasal pyramid.

The development of the technical skill sufficient to do excellent nasal surgery is certainly within easy grasp of any recognized specialist in our field, but besides learning what to do and how to do it, he more than all else wants to know why and when.

Rhinology in general offers a great opportunity for original investigative work and is actually a challenge from many points of view. In a discussion limited to the external nasal pyramid one may point out a few anatomical, physiological, and diagnostic considerations which until the present have not had wide circulation and consideration. These concerning the nasal vestibule and upper lateral cartilage are good examples. The vestibule of the nasal lobule in an adult white person is encroached upon inferiorly and medially by the medial crus of the lobular cartilage. The lateral crus at a slightly higher level extends medialward towards the septum pulling hair-bearing skin half way across the vestibular space, frequently extending past the lateral thrust of the medial crus. At a still slightly higher level the wing of the lateral crus lies lateral to the upper lateral cartilage forming a cul-de-sac or infundibulum. This structure reaches a high degree of development in the horse from a study of which an understanding of its function is derived. The vestibule is encroached upon anteriorly by the descent of the upper lateral cartilage to-

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wards the anterior inferior corner of the cartilaginous septum forming the valve of the nose. The vestibule in this area lies behind the tip of the nose forming a recess referred to as the ventricle. This is well developed in the nose of the buffalo, in whom the cul-de-sac is missing. The inferior portion of each vestibule is lined with substantial vibrissae, and rests on the alveolar process of the superior maxilla, whose superior limitation is the floor of the pyriform aperture.

The variations in the form and relationship of these structures are extremely many. The typical Negro vestibule, for example, is wide, where the Caucasian is high. The ends of the lobular cartilage do not encroach much upon the vestibular space. The floor of the pyriform aperture runs unobstructedly into the subnasal fossa below and into the floor of the nasal chamber behind, while in the typical white man the floor rises into a sharp edge going to the nasal spine, actually creating a bony wall sharply demarcating the anterior alveola face from the receding floor of the nasal chamber. Many in-between types, both as to soft structures and to bony and cartilaginous structures are to be seen in American Indians, Filipinos, and Mexicans. Children in their development go through many changes running the gamut from the negro Hyperchamaerine type to the white Leptorhine. A glance at these structures in primates is enough to distinguish the characteristics which separate them completely from any human form. These are the absence of nasal spine, and the uninterrupted continuity of bone structure from the teeth to the posterior portion of the floor of the nasal chamber.

The vestibule must obviously belong to the nose which it serves, and especially to the external nasal pyramid of which it is a part, but developmental and traumatic injuries may disturb this necessary anatomical harmony with subsequent serious functional distress. Most of the vestibular structures are parts of the nasal lobule, but the upper lateral cartilage which with the septum makes a controlling valve opening into the nose behind, is part of the cartilaginous vault.

The cartilaginous vault extends from below the distal portions of the nasal bones to the caudal end of the septum. It is solidly conjoined with the nasal septal cartilage and extends laterally on each side of the nasal arch, only partially occupying the pyriform aperture, the rest being completed by the intricately interwoven tough glistening connective tissue fibers which connect the cartilage with both surfaces of the neighboring bones. Internally, the vault is covered by mucoperichondrium of the nasal chamber; externally, by subcutaneous tissues together with the meager supply of skeletal muscle fibers which are part of the larger organ of expression. The terminal portions of this vault are attached to the septum and are referred to as the upper lateral cartilages. They have a triangular shape the terminal point of which meets the anterior inferior portion of the cartilaginous septum. The old terminology of triangular cartilage is very descriptive of this portion of the cartilaginous vault. The most proximal portion of the cartilage is attached to the under side of the terminal portion of the nasal bones, extending upward and laterally for distances varying from 3 to 10 mms. The middle portion is a transition from a broad, firmly attached, strong, inflexible cartilage structure, to the thin, delicate, movable terminal portion (usually not attached to the septum) which is the functioning valve of the nose. This middle portion may be markedly angulated longitudinally producing a ribbed effect which gives it strength and resilience. The anterior area of the vault close to the attachment of the bones, together with its continuity with the nasal cartilage, is the center of strength and the support of the nasal roof. It is truly the key stone of the nasal arch. The mucosal lining of the valve area is very firmly attached, especially at the angles. As one proceeds higher the attachment is less firm and may be easily separated with

a periosteal elevator permitting entry to the area beneath the nasal bones to proceed with great facility.

This is but a very brief sample of the sort of detailed anatomical information required for every portion of the nose. If one adds an understanding of functional relationship and adequate diagnostic methods one begins to see the concepts that a rhinologist develops with study and experience.

The following are a few of these concepts which are to be further elaborated and illustrated:

1. Combining pyramid and septal surgery must be a procedure accepted, approved, and easily performed by the rhinologist.

2. Shortening the nose is not only the shortening of the tip length, according to Joseph, or by the rotation of the lobule according to Fomon et al, but also a diminution of the nasal height changing the nasal index.

3. Cutting the upper lateral cartilages to aid shortening of the nose (according to Joseph) cannot be replaced by doing little or nothing to them but must be replaced by a reconstruction based on exact structure and function information.

4. Inspection and photography of the base of the nose with and without retracting instruments and with the head held in several planes help in diagnosis of functional deficiencies.

5. Study of nasal valves in vivo, at operations, on cadavers, elucidates tension, collapse of the upper laterals, ballooning of upper laterals and their relationship to sleep and rest.

6. In connection with the above, the concept of using the upper laterals to correct a small saddling of the cartilaginous vault becomes unacceptable.

7. The conception of the removal and disposal of a hump from a nose is replaced by the one which offers restoration or repair of the nasal roof.

8. Narrowing a nose is now part of a conception of changing the nasal aperture (to be distinguished from the pyriform aperture).

9. The floor of the pyriform aperture has a varied structure but is always characteristic of the ethnic origin of each individual. The vestibules of the lobule must conform to the patterns dictated by the underlying bone.

10. The external nasal pyramid is an attic and a considerable air space—quite empty—covered by an insulating roof. It offers protection to the internal nose against outside influences and helps retain the moisture and warmth of expired air for the benefit of the nasal mucosa.

11. Therefore any deformity, injury, or disease of the external nasal pyramid making rhinoplasty or rhinoplastic procedures necessary, becomes the responsibility of the rhinologist who is dedicated to the prevention and treatment of nasal disease.

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HOSPITAL MANAGEMENT OF HEPATITIS *

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Viral hepatitis, in spite of our great attention to it during the recent wars and subsequent years, remains an enigmatic disease that often poses unrivalled problems in diagnosis and management. Usually a benign and self-limited disease whose very nature encourages complacency in both its victim and his physician, it may pursue a relentless course and fulminate in death while the physician—lacking a specific therapeutic tool — is helpless to intervene. Its deceptive character is all the more tragic because the disease prefers to strike young adults who are essential to the stability of the home and, in the larger picture, to our whole economy. Even if the disease does not terminate fatally, its import is exaggerated by the threat of prolonged morbidity.

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When its course is benign and free from complication, as it is in the majority of cases, the average period of morbidity exceeds two months; furthermore, over half of that time is spent in greatly reduced activity if not bed rest. The unfortunate victim who feels compelled to return to full physical activity before the disease has completely subsided does so at the risk of a recrudescence with further debility and, perhaps, progression to permanent liver damage.

The purpose of this paper is to review our experience with viral hepatitis and to present a therapeutic regimen, established through trial and error, that has been successful in restoring to apparent good health about 92 per cent of the patients subjected to it.

MATERIAL

The Veterans Administration Hospital in New Orleans was activated in May 1946, or just eight years ago. Since then a total of 115 patients have been treated there for viral hepatitis. Pertinent data relative to those patients are summarized in Figure 1.

	NUMBER	PERCENT
VIRAL HEPATITIS	115	100.0
(A) CHRONIC PRIOR TO ADMISSION TO VAHNOLA	10	8.7
(B) PATIENTS WITH PREVIOUS BUT CURED HEPATITIS	4	3.5
(C) PATIENTS WITH RECOVERY AND NO RELAPSE AFTER TREATMENT AT VAHNOLA	99	86.1
(D) PATIENTS WITH RELAPSE AFTER TREATMENT AT VAHNOLA	7	6.1
(E) FATAL	9	7.8
INFECTIOUS (IH)	5	4.7
HOMOLOGOUS SERUM (SH)	4	50.0

NOTE ALL PATIENTS WERE MALE

Figure 1. Cases of viral hepatitis admitted to the Veterans Administration Hospital, New Orleans, since its activation in May 1946.

Of the entire group, 107 had endemic or infectious hepatitis (IH), and 8 had homologous serum hepatitis (SH). The average age of the group, all of whom were men, was 30 years; 39 were Negroes and 76 were white. Those data are obviously weighted by unescapable peculiarities of a clientele limited to the veteran population. The absence of female patients with hepatitis reflects the comparatively low number of female veterans. Likewise, the ratio of Negro : white patients with hepatitis parallels a similar ratio in the veteran population of this region. The majority of veterans currently eligible for hospitalization saw duty in either World War I or II and, therefore, range in age from the third through the sixth decade insofar as the period covered by this paper is concerned. Presented with that selected population, viral hepatitis would seem to prefer the young adult male. Ten of the patients (8.7 per cent) gave a history of previous hepatitis with persistence of symptoms and abnormalities in liver function tests indicative of chronic disease. Four others (3.5 per cent) gave a history of previous hepatitis with absence of symptoms subsequently, suggesting that the initial disease had been cured. Ten of the patients met the usually acceptable criteria for the diagnosis of anicteric hepatitis, if one is willing to accept that diagnosis in the absence of liver biopsy.

Awareness of the treacherous nature of viral hepatitis has fostered the policy of hospitalizing all candidates for admission in whom the diagnosis is suspected, regardless of how mild the disease may seem to be. Patients are either frightened into seeking hospitalization by the appearance of jaundice (only 10 of 107 patients were not jaundiced when admitted), or are referred by their physicians. Referral often implies unusual severity of the disease and/or impracticality of adequate home treatment. In this series the average patient (exclusive of those with chronic disease and of those who died) was ill for sixteen days prior to hospitalization. It is evident, then, that during the phase of the disease when the greatest havoc is being wrought in the liver, the average victim is not subject to the therapeutic discipline of the hospital and, in all likelihood, has not as yet sought the aid of his physician. Perhaps in that interlude between the onset of the disease and the institution of adequate treatment lies the cause of the prolonged morbidity that

characterizes viral hepatitis.

TREATMENT

In the absence of a specific cure for the disease, current treatment of the usual case of viral hepatitis hinges upon rather simple hygienic principles that can be employed in the home as well as in the hospital. Obviously, all patients with hepatitis cannot be hospitalized for one reason or another, nor is it advocated that they should be. However, the hospital remains the place where the strict regimen often necessary in the treatment of the disease can be carried out most effectively.

A. *Rest:* Rest is regarded as the most important single element in the treatment of hepatitis. In these days of public awareness of more dramatic therapeutic measures, rest often becomes an ethereal thing imposed with difficulty on patients who may be deeply jaundiced, yet may feel quite well. The physician must determine the degree of rest that is necessary and over what period it must be imposed. Moreover, he must deal with the dismal problem of the patient who cannot obtain the prescribed amount of rest because of economic demands made of him.

Upon admission to the hospital the patient with hepatitis, regardless of the degree of his morbidity, undergoes a period of strict bed rest the duration of which is determined by the observation needed to anticipate the probable course of the disease. Strict bed rest as used here implies loss of bathroom privileges. It is thought that the laboratory tests which are most helpful as guides for resumption of physical activity are determination of serum bilirubin, 2-to-4 p.m. urine urobilinogen and bromsulfalein retention (per cent retained forty-five minutes after injection of 5.0 mg. of dye per Kg. of body weight). Bathroom privileges are allowed once the serum bilirubin has reached its maximum level and has begun to decrease. Bed rest is terminated when the serum bilirubin has decreased to 1.0 mg. per cent or less, and the 2-to-4 p.m. urine urobilinogen output is less than 1.0 Ehrlich unit. Improvement in those laboratory tests should be, and generally is, paralleled by subjective improvement; however, persistence of morbidity calls for additional bed rest even if liver function tests are normal. After bed rest has been terminated, activity is gradually increased until the patient has the freedom of the hospital. If such activity does not precipitate a recrudescence, the patient is placed upon therapeutic leave for two weeks. During that period he is advised to avoid strenuous activity and hepatotoxic substances. It is thought that bromsulfalein retention at this stage of the illness should be 10 per cent or less when determined as outlined above. Upon his return from leave the patient undergoes further liver function tests. If the results are satisfactory and there has been no recrudescence of symptoms, he is then discharged from the hospital. Further rest at home is advised if bromsulfalein retention exceeds 5 per cent. The patient is warned to seek medical aid if resumption of full activity causes such ominous signs as loss of appetite, jaundice, and darkening of urine. The latter sign, which seldom fails to attract the attention of the patient, is respected as a harbinger of active hepatitis because it antedates frank jaundice. Any recrudescence of symptoms and/or deterioration of liver function tests during the convalescent phase calls for resumption of bed rest with subsequent graduation of activity in the manner just described. In this series the average duration of hospitalization was fifty-five days, the period of therapeutic leave being included in that figure.

B. *Diet:* In the treatment of viral hepatitis we have gone through a period of overzealous approach to dietary management. Such a period was undoubtedly a natural sequela to the importance traditionally attached to the influence of diet in the treatment of cirrhosis. It must be recalled, however, that the victims of hepatitis are usually young persons who have been in previous robust health and excellent nutritional state; therefore, they

are not subject to the deleterious effects of poor nutrition that plague the person with cirrhosis. It seems logical, therefore, that the diet prescribed for the usual victim of hepatitis is adequate if designed to prevent the development of deficiencies during the course of the disease. Of course, this does not infer that those patients who are malnourished prior to the onset of hepatitis should not have their deficiencies corrected through a more aggressive dietary program. The need for such action is highlighted by the added severity that hepatitis assumes in debilitated folk.

Early in the course of the disease problems which arise relative to dietary management include anorexia, nausea and vomiting. During that phase adequate fluid and caloric intake can best be afforded through the parenteral administration of glucose solutions, plus the necessary vitamins and electrolytes to maintain physiological levels. When anorexia is profound it is advisable to administer such supplements on an "around-the clock" schedule, thus avoiding any lengthy period when the damaged liver is deprived of an adequate supply of glucose. It is important that the physician resort to an accurate food intake tally in determining how much parenteral feeding is necessary, for the word of the anorexic patient is not trustworthy. To him a forkful becomes a plateful, and any quantity of food that satisfies his appetite is interpreted as an adequate meal, regardless of how small it might be.

Once the appetite has returned and parenteral supplements are no longer indicated, one is faced with the problem of what to feed and how much. It is thought that the patient's appetite can then serve as the best guide in dietary management. We offer the general hospital diet with added portions to bring the daily caloric intake to between 2500 and 3000. Included in such a diet are about 100 grams of protein and 70 to 100 grams of fat. In the usual case of hepatitis there is no real need for a greater quantity of protein, especially in view of the failure of comparatively enormous quantities to alter the course of the disease significantly. However, additional protein may be indicated when a previous deficiency exists, or when the disease causes a failure in protein synthesis incident to liver damage. Stringent fat restriction has been passé in the treatment of hepatitis since it became evident that food containing little fat is so unsavory that appetite is seriously hampered. Furthermore, fats cause no demonstrable harm to patients with hepatitis who tolerate them quite well, particularly those fats of dairy origin. They need not be restricted unless there is an aversion to them, in which event the patient usually foregoes them voluntarily.

In our experience the plan of treatment outlined so far, which insists only upon adequate rest and common-sense dietary control, will restore to good health the great majority (roughly, 90 per cent) of patients with viral hepatitis. Occasionally, however, one fails to respond to the regimen, but progressively deteriorates. The following are signs that call for aggressive action in an effort to forestall hepatic coma, a state from which there is seldom a return: (1) Progressive subjective deterioration in spite of adequate treatment; (2) deepening jaundice; (3) progressive lengthening of the prothrombin time in spite of adequate parenteral supplement of vitamin K; (4) progressive increase in the ratio of free : total serum cholesterol. When a patient presents those ominous signs, what else can be offered him?

A. *Hormones:* Cortisone and adrenocorticotropic hormone (ACTH) offer considerable promise of benefit if employed as soon as inadequacy of conservative therapy is suspected. ACTH is preferred if the ratio of free : total cholesterol is within normal range, and is administered by slow intravenous drip in dosage of 25 mg. daily. If the ratio of free : total cholesterol is abnormally high, however, cortisone is the hormone of choice. It is administered intramuscularly in an initial dose of 300 mg., thereafter reduced by

25 to 50 mg. daily until the minimal effective dose is established. Once committed to the use of either hormone, the physician is obliged to continue its use until recovery is certain; i.e., overtreatment is less dangerous than premature withdrawal of the hormone. Contrary to the usual situation in viral hepatitis, fluid and electrolyte balance now must be followed closely, particularly the serum potassium. Whereas ACTH and cortisone induce a potassium diuresis that necessitates supplement of the ion, the severely ill patient who becomes oliguric may have hyperkalemia that demands reduction of potassium intake. Patients receiving either ACTH or cortisone are placed upon low-sodium diets.

B. *Blood:* Failure of prothrombin synthesis by the damaged liver leads to a hemorrhagic tendency that may have serious proportions. It is not uncommon for acute blood loss to be involved in the death mechanism in fatal hepatitis. Transfusion of fresh whole blood is indicated when response to parenterally administered vitamin K is lacking and signs of hemorrhage appear.

C. *Oxygen:* Hypoxia is devastating to the damaged liver, therefore the organ should be supplied with maximally oxygenated blood.

D. *Antibiotics:* Antibiotics have been employed to reduce intestinal flora, thereby reducing the streaming of bacteria and their products through the damaged liver. We have seen little benefit derived from antibiotics in the treatment of viral hepatitis, and do not use them routinely. However, progressive deterioration of a patient warrants some measure of empiricism and we are not adverse to using antibiotics under those circumstances.

E. *Lipotropes:* Fatty metamorphosis is of such rare occurrence in viral hepatitis that its demonstration casts doubt on the diagnosis. Therefore, one would expect little benefit from the use of lipotropic substances in the treatment of the disease. However, since methionine must be present in the parenchymal cell to prevent its necrosis, it is advisable to insure an adequate supply of that amino acid.

F. *Protein hydrolysates:* Coma is the most dreaded event in the course of fulminating hepatitis, for it almost invariably precedes death. What causes hepatic coma remains an enigma, but to date derangements in ammonia metabolism have been indicated as the most plausible explanation. In that light it seems illogical, if not dangerous, to administer products rich in amino acids. We do not advise the use of protein hydrolysates in any phase of viral hepatitis.

G. *Serum albumin:* This costly blood derivative has a questionable place in the treatment of severe hepatitis. It may be indicated if liver damage has seriously interfered with albumin synthesis. It may have some value in averting hepatic coma, inasmuch as we have seen one patient recover from coma (due to Laennec's cirrhosis) while under treatment with it.

H. *Liver extract:* It is questionable that liver extract is of value in the treatment of liver disease, but we still exhibit it empirically in severe disease, hoping it offers some benefit however slight.

RESULTS OF TREATMENT

The reader is again referred to Figure 1. That viral hepatitis is usually a benign, self-limited disease is evident from the fact that 99 (or 86.1 per cent) of the 115 patients recovered uneventfully, all but one having received just the basic therapeutic regimen, i.e., restricted activity and adequate diet. Seven of the 115 patients (or 6.1 per cent) had relapses following discharge from the hospital and had to be readmitted for further treatment. Of those 7, 5 were restored to good health while 2 have continued to have signs of chronic disease. One had been ill for months prior to hospitalization and it is thought that his disease is kept smouldering by his inability to obtain adequate rest. The other is a narcotics addict and it is quite possible that his "relapses" represent reinfections with the virus of homologous serum hepatitis. Nine (or 7.8 per cent) of the 115 cases were fatal; 5

had infectious hepatitis, that number representing 4.7 per cent of 107 cases; 4 had homologous serum hepatitis, that number representing 50 per cent of 8 cases. The remarkable percentage of fatalities in the latter group argues for great caution in the transfusion of blood and its derivatives. It must be remembered that outside the military situation patients who require blood or its derivatives are likely to be under treatment for debilitating disease, and in them viral hepatitis becomes a hazard.

	PATIENT NUMBER	YEAR OF DEATH	AGE	SEX	RACE	DAYS ILL BEFORE ADM	DAYS ILL IN HOSP WITH HEPATITIS	TOTAL DAYS ILL WITH HEPATITIS	OTHER DISEASE	MODE OF DEATH	WEIGHT OF LIVER (GM)
INFECTIOUS	1	1937	21	M	N	18	5	10	SICKLE CELL TRAIT	COMA; BLEG FROM PULMONARY TREE	700
	2	1947	50	M	W	2	5	5	NONE	COMA, ANURIA, SHOCK, HEART FAILURE, BLEG FROM LUNGS	2750
	3	1948	40	M	N	21	4	23	NONE	TOXIC MYOCHROITIS, COMA	1360
	4	1952	51	M	N	30	25	35	SICKLE CELL TRAIT	COMA, ANURIA, PULMONARY EDEMA	1450
	5	1933	33	M	W	7	3	10	GONORRHEA	COMA, BRONCHOPNEUMONIA	750
HOMOLOGOUS SERUM	6	1948	20	M	N	HEPATITIS DEVELOPED IN HOSPITAL	8	8	DEBILITATED—MULTIPLE FRACTURES AND BRAIN CONCUSSION	COMA	NO AUTOPSY
	7	1947	33y	M	N	DITTO	10	10	CHRONIC MYELOGENOUS LEUKEMIA	COMA	DITTO
	8	1948	55	M	W	DITTO	6	6	LACRNEC'S CIRRHOSIS	COMA	DITTO
	9	1951	32	M	W	DITTO	13	13	SICKLEMIA TUBERCULOUS HEPATITIS	ANURIA, UREMIA, ACIDEMIA, COMA, BLED FROM GUT	2100

Figure 2. Summary data pertaining to nine fatal cases of viral hepatitis.

Figure 2 summarizes the data relative to the nine fatal cases of hepatitis. It is introduced since prevention of fatal outcome would seem to be the purpose of the therapeutic regimen in light of the fact that 92 per cent of the cases recover without apparent residual effect of the disease. Six of the 9 cases were Negroes, 3 of whom had either sicklemia or the sickling trait. Six were between 20 and 33 years of age; the others were between 40 and 55. In most instances the interval between hospitalization and death was brief. Of the 5 cases with infectious hepatitis, 4 were in the hospital four days or less. All the patients with homologous serum hepatitis developed the disease while hospitalized and under treatment for other severely debilitating diseases. All 9 patients lapsed into coma before dying. That event was accompanied by anuria in 3 of them. Suppression of urine was attributed to circulatory collapse in 1 and to bile nephrosis in the other 2. One of the latter had the sickling trait and sludging of sickle cells in the vessels of his kidneys was extensive enough to cause serious interference with the oxygen supply of those organs. Hemorrhage played a part in the demise of 3 patients, indicating that prothrombin failure is a complication to be feared and reckoned with. Of the 9 patients who died, 6 were autopsied. Only 2 were found to have livers of reduced weight suggestive of acute yellow atrophy; they had been ill nineteen and ten days respectively. The other livers ranged in weight from 1360 to 2730 grams, indicating that if hepatic coma could be averted in severe hepatitis, there is probably enough parenchyma remaining to allow return to health. Three of the fatal cases died after ACTH and cortisone became available. It was impossible to use either hormone in 1 because of widespread tuberculosis; the other 2 received cortisone without benefit. In retrospect, it is thought that neither of them received hormone therapy early enough to have altered the downward course of the disease.

CASE REPORT

The following case illustrates a probable life-saving effect of cortisone following its timely use in a patient with severe infectious hepatitis who did not respond to adequate conservative therapy:

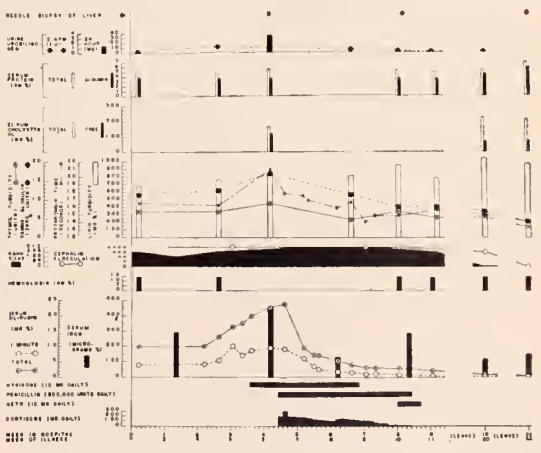


Figure 3. Summary chart of pertinent laboratory findings in a patient with severe viral hepatitis. Note prompt decrease in serum bilirubin following institution of cortisone therapy.

The patient, whose pertinent laboratory data are summarized graphically in Figure 3, was a 43-year-old white man hospitalized with infectious hepatitis (IH) of two weeks' duration. His illness did not seem severe; nevertheless, he was placed on the established therapeutic regimen which included complete bed rest, special diet and supplementary vitamins. Serum bilirubin remained essentially constant at a moderately elevated level for about two weeks after the patient was admitted. Subjectively, he felt surprisingly well and had none of the classical signs that usually accompany the early phase of hepatitis, such as anorexia, nausea and vomiting. Shortly thereafter, however, the serum bilirubin began to rise progressively, prothrombin time lengthened and there was an increase in the ratio of free : total serum cholesterol. The patient's paradoxical sense of well-being continued to belie those alarming signs of progressive parenchymal necrosis. Because of confusing elements in the diagnostic picture that need not be described here, needle biopsy of the liver was performed on the forty-fourth day of illness and verified the presence of extensive necrosis (Figure 4).

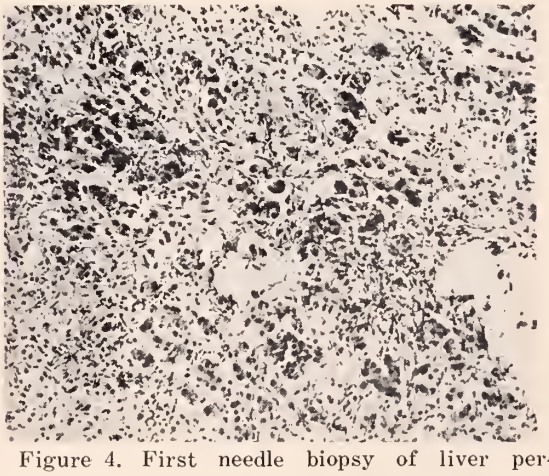


Figure 4. First needle biopsy of liver performed on patient referred to in Figure 3. Biopsy was done on 44th day of illness and prior to cortisone therapy. Massive necrosis is shown.

The patient was started on cortisone therapy and prompt decrease in the serum bilirubin resulted (Figure 3). From then on there was sustained subjective improvement that was matched by gradual return of liver function tests to normal. The second biopsy of the liver was performed on the seventy-second day of illness and the twenty-seventh day of cortisone therapy (Figure 5.) It revealed postnecrotic scarring and fatty metamorphosis. The latter is rare in the course of viral hepatitis and probably resulted from steroid therapy.

Treatment with cortisone was extended over a period of twenty-eight days; during the withdrawal phase small doses of ACTH were administered. A month of therapeutic leave resulted in neither recrudescence of symptoms nor deterioration of liver function tests; therefore, the patient was discharged from the hospital. The third biopsy of the liver was performed one hundred and sixty-eight days after the onset of illness (Figure 6), and revealed essentially normal tissue. The patient is now actively pursuing his occupation without apparent residual effects of his disease.

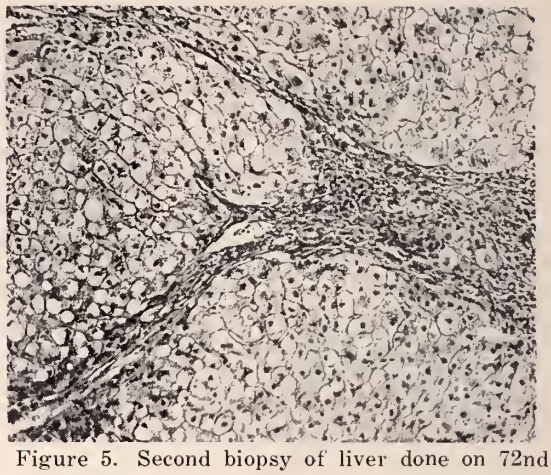


Figure 5. Second biopsy of liver done on 72nd day of illness and 27th day of cortisone therapy. Postnecrotic scarring and fatty metamorphosis are shown. The latter is uncommon in viral hepatitis and is attributed to cortisone therapy.

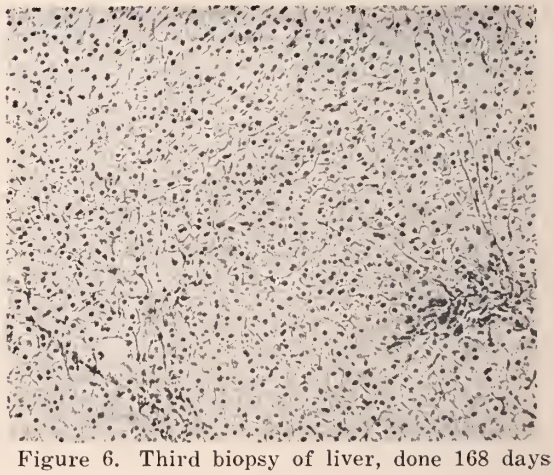


Figure 6. Third biopsy of liver, done 168 days after onset of illness. Liver is essentially normal —as anticipated because of clinical recovery and return of function tests to normal.

OTHER CONSIDERATIONS

A. *Problems in diagnosis:* In reviewing this series of 115 cases of viral hepatitis, it was noted that the two diseases most commonly involved in the differential diagnosis were Weil's disease and extrahepatic biliary tract disease with obstruction. Since early antibiotic therapy is im-

perative in the management of Weil's disease, it is thought that empiric treatment is warranted until serological studies can be completed. Differentiation between parenchymal and surgical jaundice remains a problem in spite of extensive batteries of liver function tests and other diagnostic procedures. We have recently proved to our own satisfaction that the abnormally high elevation of serum iron that is peculiar to viral hepatitis is of distinct benefit in the differential diagnosis of jaundice. Determination of serum iron is a rather simple procedure well adapted to use in the clinical laboratory. Caution is urged against panicky surgical intervention in puzzling cases of jaundice when viral hepatitis may be the disease at hand, rather than biliary obstruction.

B. *Prophylaxis:* Outside the military situation the family is probably the epidemiological unit in viral hepatitis (IH). If victims of the disease must remain in contact with other members of the family during the acute phase of the disease, the protective use of gamma globulin is advisable. This may be of added importance in view of recent demonstration that a carrier state of the disease exists. In this series of cases there was one patient who stated that 12 other members of his family had had the disease. Families in which young children are the first to contract the disease should take added hygienic precautions, because the habits of small children easily lend themselves to fecal contamination of food and drink.

SUMMARY

One hundred and fifteen cases of viral hepatitis treated at the Veterans Administration Hospital in New Orleans during the past eight years are reviewed. The therapeutic regimen that restored about 92 per cent of the patients to good health is described. A case report is presented to demonstrate the efficacy of ACTH and cortisone in the management of severe cases of hepatitis that fail to respond to more conservative therapy. Nine of the 115 patients died; 7 had relapses following treatment.

ACKNOWLEDGEMENT

Needle biopsies of the liver were performed by Dr. Frank V. Mayer and interpreted by Dr. Joseph Ziskind. Photographic work was done by Mr. F. W. Busic and Mr. W. D. Bohon.

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GLAUCOMA AS SEEN BY THE GENERAL PRACTITIONER *

EDGAR W. BOOTH, M. D.
SHREVEPORT

The theme of this paper might be said to be "Suspicion", and, in fact, if it accomplishes nothing more than to make you *suspicious* and aware of glaucoma its purpose will be accomplished. Glaucoma is still a very definite health problem in the United States. This problem is mainly one of early detection and it is this aspect that I wish to emphasize. The magnitude of the situation may be revealed by the following facts.[1]

It has been estimated that there are approximately 1,000,000 persons over 40 years of age who have glaucoma! In this age group there are over 40,000 new cases occurring each year.

Each year in the United States 3,400 new cases of glaucoma blind are recorded.

When one realizes that about 12 per cent of all blindness is due to this condition, it must be apparent what a serious problem it poses.

Glaucoma may be simply defined as a rise in intraocular pressure above normal limits. You will recall that the intraocular pressure is regulated by a very delicate balance, chemical and functional, between the secretion of aqueous by the ciliary body of the eye and the excretion of aqueous through the canal of Schlemm at the angle of the anterior chamber. Anything which interferes with this mechanism be it organic or functional, results in a rise in intraocular pressure.

For our purpose glaucoma may be simply classified as follows: [2]

1. Primary glaucoma

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

A. Congestive, inflammatory
   1. Acute
   2. Chronic
B. Chronic simple glaucoma, non-inflammatory

2. Secondary glaucoma
3. Congenital

The present day concept of the various mechanisms of glaucoma has been outlined by Sugar:[3]

"The mechanisms in the production of the increased intraocular pressure in the various diseases known as the glaucomas may be separated according to the portion of the path of aqueous flow which is interfered with. These may be considered as follows:

1. Mechanical blockage of the trabecular spaces
   a. by iris
   b. by particulate matter
2. Lack of communication between the anterior and posterior chambers
3. Obstruction of venous drainage
4. Possible overproduction of aqueous due to irritation of the ciliary processes
5. Vascular hyperemia
6. Interference with vessels in Schlemm's canal mechanism by sclerosis or narrowing of the afferent arterioles."

It is easy to see that some of these mechanisms may be affected by extraocular influences, i. e., worry and mental shock affecting the vascular bed.

I have thus briefly covered the basic essentials of glaucoma. You are probably wondering of what importance is glaucoma to the physician?

To answer this question it will help if we briefly cover the symptomatology of glaucoma and integrate this with the findings the doctor sees in the various types.

PRIMARY GLAUCOMA

Primary congestive glaucoma may be acute or chronic. The chronic form is characterized by recurrent attacks of elevated intraocular pressure. These attacks may be transient at first and then slowly increase in severity and duration. The patient may or may not complain of blurred vision and of halos around lights. The latter is more likely to be noticed by the patient. Mild recurrent headache may be the symptom which brings him to the physician. When you have a patient with the chief complaint of recurrent headaches always question him as to the occurrence of halos or of diminished vision. It is sometimes surprising, however, how poor the vision can become and the patient not be aware of it. This is because glaucoma frequently affects one eye first and of course the other eye with normal vision "covers" for the involved eye. As the attacks increase in duration the headaches become more severe and prolonged, and frequently it is at this time that the patient consults his doctor. Unless he is in the attack there may be nothing to make you suspicious. If he is in a congestive phase there will be photopsia, blurred vision, and injection of the conjunctiva. Unless you keep glaucoma in mind the headache may be confused with one of vascular origin. There may be a history that the attack was precipitated by exposure to darkness, or that the patient has been mentally upset. Occasionally, the attack may wake the patient out of a sound sleep.

The previous chain of events may merge into the acute congestive phase or the latter may be the initial attack. This acute phase is an emergency and must be treated immediately. Fortunately, this acute type is seldom missed because of concentration of symptoms referable to the eye. These are the same as previously described except much more pronounced, plus nausea and vomiting, chills and bradycardia. The anterior chamber will be shallow, the cornea hazy, the pupil dilated and the iris muddy. The eye feels hard to palpation. The disk may be reddened but will not be excavated unless this phase or a chronic simple glaucoma has persisted for some time. Frequently the fundus cannot be seen due to the cloudy cornea. In some cases in which the systemic symptoms are severe the patient is so profoundly ill that they consider their eye pain a minor part of their illness and will not call the doctor's attention to the eye and then it may be mistaken for an acute gastrointestinal affair.[4] Fortunately, these are the exceptions. An acute congestive glaucoma

should be treated immediately, for each hour delay means more loss of vision.

A final word about this type of glaucoma. Any patient who relates a history of recurrent attacks of eye or head pain, with or without blurred vision or halos should be referred for glaucoma evaluation. In doubtful cases we have certain tests to aid in the diagnosis of this type of glaucoma.

CHRONIC SIMPLE GLAUCOMA

This is the most important group in our discussion because of its frequency and its lack of identifying symptoms. The usual picture in this type is a slow increase in intraocular pressure in a stair-step like manner. The tension rises slowly to a slightly higher level and the eye then compensates at this level. This is repeated, each time the tension reaching a slightly higher level. Symptoms are usually absent early except for an occasional complaint of colored rings around lights. In the later stages there may be early morning headaches which disappear on rising. Television or movies frequently produce headaches. There may be a complaint of numerous changes of glasses or one of trouble adjusting the eyes to darkness. Still later there will be foggy vision, frontal headaches, and halos around lights. It is about this point that the physician may see the patient because of the headaches. Again let me repeat that any patient with headaches should be questioned as to the presence of foggy vision or colored halos around lights. Many patients will only give a history of headache when questioned. None of these symptoms may be present and the patient losing his sight from glaucoma. On the other hand he could have any or all and not have glaucoma. One must not forget that glaucoma is much more frequent after forty. This is the same age period when presbyopia begins to raise its ugly head. This accounts for some of the delay in recognition of this condition since the patient thinks he is supposed to be having trouble at this time. Glaucoma simplex is often confused with cataract because of the loss of vision and the slight greyish haze of the lens which is seen through the slightly dilated pupil.[5] You will note the contrast of this simple glaucoma with the congestive type. In the simple type you do not have a history of recurrent attacks. The symptoms are mild and vague until the advanced stage. I remember a case in which the tension was 65 and the only complaint was the need for new glasses.

The optic disk will show both cupping and pallor. The cupping is first noted at the temporal side of the disk. As this progresses the cupping becomes more complete and the vessels are seen to bend as they cross the disk edge and are pushed to the nasal side.

The third group to be discussed might be called induced glaucoma. This includes the cases of glaucoma initiated by the administration of the sympathomimetic drugs, such as banthine, atropine, belladona, etc. If during the course of administration of one of these drugs for other conditions the patient should complain of blurred vision, loss of accommodation or pain of any degree in the eyes, it is important that this patient be checked for glaucoma. In these cases I feel that the patient has a glaucoma potential which was precipitated by the drug. Therefore, it is doubly important that this patient be referred for further study so that he may be followed for development of a subsequent glaucoma. I see about two cases of this a year and I am sure that those in eye clinics see many more.

INFANTILE GLAUCOMA

This is a hereditary condition, of recessive transmission. Ninety per cent of the cases appear by the third year. It is due to a congenital defect in the angle. It is characterized by an increase in size of the globe. It is not common but is mentioned only to remind you that it does occur, and that it can be treated by surgical means.

SECONDARY GLAUCOMA

Secondary glaucoma infers that the glaucoma is secondary to some other process in the eye. For our discussion it will

suffice to say that if the doctor has to treat an eye for trauma, inflammation, or iritis, and it does not respond to treatment, the occurrence of a secondary glaucoma must be considered. Patients who have gross cataracts and who present themselves with an injected painful eye may have both a cataract and a glaucoma.

OBSERVATION OF THE OPTIC DISK

In all of our foregoing discussion I have given a general view of glaucoma of which you are probably already aware. I would now like to discuss more fully the investigation of the optic disk with the ophthalmoscope, an instrument which I hope most of you possess. I believe that observation of the optic disk in the evaluation of glaucoma is less well understood then it should be. To recognize the abnormal we should first know the normal variations. Many years ago, Elschnig classified normal disks into five types:

Type 1—Funnel type—In this you will see the entire disk is filled in by nerve fibers except for a tiny central funnel surrounding the vessels.

Type 2—Cylindrical—This has a central, deep, steep walled excavation of not more than one-third disc diameter. The altitude of the excavation is greatly in excess of the base.

Type 3—Saucer shaped—This is a shallow excavation, taking up much of the disk. It is abrupt above and gentle below. On the temporal side the slope is more gentle. Over the abrupt drop above one may see apparent interruption of the vessels.

Type 4 is seen in myopes. The temporal half is excavated and slopes up to the level of the retina. On the nasal side there is a rather thick layer of fibers and the level drops abruptly down to the deepest portion of the excavation.

Type 5 are those with atypical nerve arrangements which border on congenital anomalies.

We who are seeing eye patients make records of each patient's disk appearance for future comparison. What you are interested in as a doctor, however, is what constitutes a suspicion of glaucoma. You can have a very large excavation and still have a normal disk.

Type 3 disks make one very suspicious of glaucoma. Actual cases of glaucoma with this type of cup are rare, however. The important area to keep in mind is the nerve fiber layer itself. In physiological excavations these cup borders never reach the disk border except on the temporal side and that usually in type 4.

When one sees the nerve fiber layer thinned out to the disk border above or below, you can be sure that it is not a physiological cup. Remember that normally the nerve fiber layer is pink in color. In judging the color of this layer do not contrast it with the surrounding retina as this is sometimes misleading. Evaluate the color of the fibers strictly on the intensity of pinkness on the nasal side of the nerve head. In some fundi there may be a conus or a circumpapillary halo which will give an atrophic nerve fiber layer the appearance of being more pink than it actually is.

As I said early in this paper I hope I have made you suspicious. In conclusion, let me quote from an article by Kronfeld.[6] "Ineffectiveness of the therapeutic measures taken by the ophthalmologist accounts for only a small percentage of the blindness that occurs in the U. S. A. Most of the blindness occurs because the disease was not recognized."

SUMMARY

The general considerations of glaucoma have been presented and the important problem of early recognition emphasized.

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CHONDROMALACIA OF THE PATELLA

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In recent years arthrotomy of the knee joint has become an accepted procedure, not only from the therapeutic standpoint, but also for the purpose of diagnostic survey. Prior to this opinion, laity as well as professional personnel seemed to be hesitant to a degree in exposing the articulation to this direct attack. This hesitancy was no doubt due to the unwarranted belief that exposure of the joint led directly to postoperative complications of instability, continued pain, and restricted motion. With the advent of improved surgical technique and the overall lessening in the danger of infection, as well as preoperative preparation, such as quadriceps training and the use of antibiotics, the orthopedic surgeon has broadened indications for this procedure. Exploration of the abdomen by the general surgeon has been of great value and now in similar concept, arthrotomy has aided diagnostic ability in establishing those many factors which have been broadly grouped under the term "internal derangement of the knee joint".

Pathology of the joint classified as "internal derangement" has recently been presented by Peabody as follows:

1. Meniscus lesion.
   a. Post-traumatic
   b. Degenerative
   c. Cystic
2. Chondropathy of patella.
   a. Degenerative
   b. Post-traumatic
   c. Congenital
3. Osteochondritis dissecans.
4. Joint mouse, simple loose body.
   a. Synovial origin
   b. Arthritic, hypertrophic
5. Recurrent dislocation of the patella.
6. Ligamental instability, all types.
7. Congenital meniscus lesions.
   a. Discoid anomaly
   b. Calcification or ossification
8. Ununited fracture of the tibial eminence.
9. Hypertrophic synovial villi or fat pad.
10. Osteochondromatosis.

It is the intention of the author to discuss chondropathy of the patella and to indicate the usage of the term chondromalacia. It is believed that this condition is more frequently present than previously credited, and that it is a distinct entity that offers chronic disability involving the knee articulation. During recent years this subject has gained the attention of reviewers and with the stimulation of the past armed conflict, various statistical reports have been recorded, indicating the relative increase of this pathology.

There is a variance of opinion as to the presentation of original work of this entity. It has been accepted that Beudinger, in 1906, first outlined the pathological factors of fissure formation of the cartilage of the patella. König, in 1924, was officially credited with the use of the term "chondromalacia pattellae" in the literature but others believed that Aleman indicated this pathology as early as 1918. As in many cases Aleman did not record his full report until 1927 and the actual distinction as to the original presentation has remained at a variance among authors. Certainly, it is to be noted that the majority of the early work was done by Scandinavian surgeons and only recently has it gained the attention of surgeons within this country.

In general, the term "chondromalacia" has been accepted to describe a circumscribed degeneration of the articular surface of the patella with softening and fibrillation of the cartilage. This later is followed by additional degeneration with thinning of the cartilage and wearing away of the articular surface. In more chronic phases the osseous structure of the patella is exposed producing changes of proliferation and sclerosis.

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

The patella is a structure vulnerable to trauma. It is a large sesamoid bone developed within the substance of the quadriceps femoris tendon. It remains an essential part of the extensor apparatus of the knee. The bone acts in a protective role as far as the patella surface of the femur is concerned. The articular cartilage which is more or less avascular acts as a cushion to absorb and dissipate pressure. The patella aids in the leverage action of the quadriceps musculature per se. It is understood that the removal of the bone does not seriously affect the power of joint motion, and this has been repeatedly proven by the extirpation of the structure for various reasons. It has been reported that an increase of osteo-arthritis of the knee can be observed in those cases in which the patella has been removed.

It is the general consensus that the basic etiology for this entity is trauma, and in reviewing the various cases the author believes that the traumatic factor must be accepted as the major basis for this degeneration. Trauma is not necessarily to be considered as singular and acute, but also with the development of changes over a prolonged interval secondary to this factor it is considered that minor trauma in degree extending over a chronic period, may produce the changes of this articular degeneration. Our knowledge relative to the nutritional value of synovial fluid is not complete, but it has been expressed by Hirsch, in 1944, and by other authors that a loss of proper nutrition to the articular cartilage is also a cause for degeneration. Anatomically it is known that the cartilage is avascular, especially towards the center. The factor of age has also been considered since there appears to be some similarity between chondromalacia of the patella and degenerative osteo-arthritis, as expressed by König. Other authors have indicated that there is a predisposition towards trauma to the knee cap in reference to the peculiar mechanism of the joint in which motions of this articulation allow direct contact with the facet of this patella structure. Although the factor of trauma seems to be most important, authors have reported various studies which indicate that degeneration of the cartilage without apparent trauma does exist and, therefore, in line with this involvement would accept a constitutional disposition as an etiological factor.

PATHOLOGY

Pathologically, chondromalacia of the patella is essentially a cartilaginous degeneration. Only in the more chronic stages of this abnormality will the underlying osseous structure of the patella show changes. Pathology may be considered in various phases. First, is the contusion with secondary fissures, then the malacia in which the cartilage becomes raised and fibrillated and third the actual degeneration of the cartilage with final changes of the underlying osseous structure and synovitis.

Cartilaginous origin of this pathology must be understood for this makes it entirely different from osteochondritis dissecans. In this latter pathology there is a necrosis of the subchondral bone, resulting presumably from vascular change, which eventually allows the separation of the bone at one area of the cortex, and then follows degeneration and necrosis of the cartilage attached to the separated fragment.

From the gross standpoint the pathology of chondromalacia would indicate that the cartilage changes from a firm consistency of bluish-white tinge to an opaque yellow substance, which becomes soft and adopts a frayed appearance. In the early stages there is fibrillation of the superficial layer of cartilage, and the deeper layer of the cartilage becomes edematous and swollen. As the process continues the fissuring opens to the deeper structures allowing for degeneration so that with constant motion of the knee cap the structure becomes thin and finally may be opened to expose the bone. In the final stages the underlying osseous structure may show various degrees of sclerosis and osteophytic formation.

Microscopically the reaction is generally avascular and the chondrocytes show early death with development of open lacunae. In these early phases these chondrocytes may be grouped in several areas, but will gradually disappear, as the cartilage becomes fibrillated and frayed.

In chronic cases the area of the femoral condyle adjacent to the patella will show a "mirror or kissing" reaction, and similar degeneration of the cartilage will develop. In some cases the cartilage will break off into the joint and by concretion develop smaller loose bodies. The synovial membrane is secondarily involved producing a noninfectious inflammatory reaction with increased joint fluid and thickening of the synovial structure.

In general, the areas involved are more commonly the inferior and medial border of the patella over the medial facet, but other areas of the patella may become affected.

INCIDENCE

In reviewing the subject it has been noted that the condition may occur generally in all ages, but appears to be more common in the younger adults. Studies have indicated that there appears to be a higher incidence of this abnormality in comparison to other derangements previously recognized, and likewise because of this increase it is now becoming a more common cause for arthrotomy of the joint.

In 1927, Aleman indicated 220 arthrotomies in which approximately one-third showed some form of patellar degeneration. Darrach, in 1935, reported 157 operations of the knee joint in which 36 cases, or approximately 23 per cent, showed similar change. Hayes reported 124 cases in which 9 showed chondromalacia. Sotohall submitted 65 cases with 12 or 18.5 per cent revealing changes of chondromalacia. Chaklin, in 1939, reported on 159 cases of arthrotomy of the knee joint in which 38 cases presented changes, and Karr and Howard reported on 60 cases in which 19 (31 per cent) showed evidences of chondromalacia.

In reviewing this literature it has been noted that chondromalacia frequently occurs with other derangements of the joint, and it was also noted further that the abnormality may occur secondary to various mechanical derangements such as, subluxation of the patellae, fractures of the patella, and various traumas such as falling upon the knee in semiflexion, and with secondary ligamentous and menisci pathology.

The author had the occasion to review 150 cases of arthrotomy of the knee joint taken from the records of Charity Hospital of New Orleans, Touro Infirmary and Hotel Dieu Sisters Hospital, over a period January 1950 to January 1954. In these 150 cases there were 32 recorded cases (21 per cent) of chondromalacia of the patella. Among this 150 cases of arthrotomy the examiner also noted 71 cases of meniscus laceration, 19 cases of osteochondritis, and 11 cases of osteochondromatosis. The remaining number included calcifications of cartilages, osteo-arthritis of the knee joint and removal of foreign bodies.

DIAGNOSIS

In seeking the diagnosis of this condition, the clinical history has indicated the presence of chronic knee discomfort varying in degree of intensity. As in most cases of derangement, the fundamental complaint is that of pain within the knee joint associated with weakness of the extremity, especially as noted in traversing uneven ground or ascending or descending stairs. It has been observed that many of these cases recorded the sensation of stiffness in knee joint function, especially in getting up in the morning, and referred to occasional temporary locking of the joint with catching sensations as the knee was brought from the flexed to extended position. Many of these patients referred to distinct crepitation. Some would indicate a "scraping sensation within the joint" and others would refer to "audible sensation of grinding sounds in walking". True locking of the joint such as experienced in laceration of the menisci is generally not present. The patient's complaint of catching or tempo-

rary locking associated with acute pain is believed to be probably due to loose bodies, which have broken off from the frayed cartilage structure.

The location of the pain is important in arriving at this diagnosis. It has been stated that the pain is central to the knee cap and can be aggravated by compression of the structure. In this manner crepitus is also accepted as a characteristic sign of this abnormality. Most examiners prefer to elicit crepitation by having the patient lie upon the back with the hip and knee flexed. From this attitude extension of the knee joint will reveal upon palpitation a grating sensation or crunching effect, as the patella moves across the femoral condyle in ratchet motion. The frayed cartilage acting as a mechanical resistance to this movement may account for the insecurity of the knee to which many patients refer. In some cases with synovial irritation, as in secondary type, the presence of effusion of the joint may limit the sensation of crepitus as the fluid separates the frayed surfaces between the patella and condyle.

Physical findings, such as atrophy of the thigh, limited motion of the knee joint, and tenderness upon pressure over the knee cap likewise aid in the establishment of diagnosis. In addition to the clinical history and signs and symptoms, as indicated above, aspiration of fluid within the joint may show some increased content of cloudy type and at times flecks of cartilage may be noted. On many occasions the fluid is clear, however, and the author is of the opinion that only in the more chronic cases would one expect cloudiness of fluid.

X-ray studies are of little help in the diagnosis of this condition. X-rays taken during the early phases of this condition are negative for bone change. At times in the later stages of this abnormality marginal osteophytes may be present in the patella, and may indicate the presence of advancing degeneration. Recently, various studies by pneumoradiography of the knee have been accomplished, but the experience of the author in this contrasting medium study is such as to state that positive contrast media will only be noted in the stage of degeneration of the knee cap that should ordinarily be diagnostic by other means through clinical interpretation.

TREATMENT

In discussing the treatment of this condition, the examiner would indicate that severity of the complaint is of greatest value. Minor complaints may allow some reaction to conservative care by restriction of knee activity and local physical therapy. The observation of a patient over a prolonged interval is necessary to determine either recovery or the possible continued or increased disability. In general, however, the persistence of these complaints would indicate surgical intervention and the accepted procedure is exposure by arthrotomy of the knee joint through a medial parapatella incision. Methods of surgery to be utilized actually depend upon the degree of involvement of the knee cap which can only be noted at exploration. Methods would be: (1) by the excision of the degenerative cartilage, removing it by scalpel; or (2) a patellaplasty consisting of the removal of the denuded cartilage area with intervention of synovial membrane from the infrapatellar area. The author does not believe that this latter procedure is favorable. (3) The complete removal or excision of the knee cap. The decision must be determined at the time of surgery. It is also necessary to inspect the knee joint completely in order to ascertain that there are no loose cartilaginous bodies within the joint, and to determine if any additional derangement is present. Conversely, it must be considered that incidence of chondromalacia present in those joints open for other purposes would certainly indicate the necessity for exploring the knee cap in order to rule out this pathology.

Among the cases recorded in this review are 9 cases personally managed. All of these cases showed moderate changes of the knee cap and at surgery resection of the degenerative cartilage down to the

bone was accomplished. Eight cases of this group have shown excellent recovery, one case continues to have some discomfort in the knee, which the author considers to be the result of a chronic synovial reaction and treatment of this condition has continued by the use of hydrocortone instillation. Of the 32 cases reported, 5 were considered severe enough to require excision of the patella. Insofar as the records show, apparent favorable operative results occurred but the degree of motion obtained has not been determined.

It is recommended that the postoperative treatment consist of the application of pressure bandages over the knee joint.

A splint has not been utilized postoperatively, but this has been used by other surgeons, especially in those cases in which the knee cap is removed or a patella ligamental plication has been accomplished. If splint fixation of this type is utilized the examiner would recommend an interval period of some two weeks of immobilization followed by gradual motion of the joint. The examiner, in the more minor cases, has continued the pressure dressings for a period of some seventy-two hours with changing of dressings and the maintenance of restricted mobility with the patient sitting in bed until the eighth day. Quadriceps exercises are begun within forty-eight hours by setting procedure. The patient is gradually allowed to bend the knee after the sutures are removed on the eighth or ninth day. Crutches are utilized in the early phase of ambulation for an interval period of approximately two weeks. Weight-bearing at this time is allowed if the patient is able to accomplish this without discomfort. After some two weeks the crutches are discontinued, the patient is given various forms of physical therapy, so that the expected recovery interval is within a period of eight to ten weeks.

CONCLUSIONS

This review of one form of internal derangement of the knee joint has been presented in an effort to bring to attention the comparative prevalence of chondromalacia of the patella. The statistical report obtained through the records at the hospitals has indicated that this condition is fairly frequent and as a direct entity must be accepted as another cause for joint exploration and therapy.

Chondromalacia of the patella will simulate the findings of internal derangement and must be considered in all cases of joint trauma. Persistence of this abnormality will cause increasing disability of the joint and when recognized the proper surgical procedure such as chondrectomy or patellectomy will result in a favorable response with recovery in function of the joint. Associated synovial reaction of chondromalacia will clear with the removal of the original pathology. It is believed that in all patients who have other than minor involvement or those who do not respond to conservative care, that operative intervention is able to produce definite relief and allow return of function of the knee joint. The actual method of treatment should be determined by the severity of symptoms and the exploration of the patella at operation. Lesions of the cartilage of the patella are to be accepted in a high incidence among the various mechanical disturbances of the joint, and unless they are treated will produce further secondary and progressive changes of the joint.

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DYSFUNCTIONAL UTERINE BLEEDING *

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Two thirds of all women experience irregular bleeding at some time during their menstrual lives. Most of these disturbances are minor and self limited, and require only careful observation. The remaining patients present histories of profuse or prolonged bleeding which demand accurate diagnosis and vigorous therapy. Organic pathological states account for about four fifths of these disorders while the other fifth is not associated with demonstrable structural changes. The term dysfunctional uterine bleeding refers to this group. The term functional uterine bleeding is used synonymously. The former designation is preferred because it implies abnormality and more properly emphasizes the condition.

Dysfunctional uterine bleeding may therefore be defined as irregularity or excess of menstrual flow in the absence of organic disease of the reproductive or hematopoietic organs. This definition implies careful exclusion of pregnancy, infections, neoplasms, endometriosis, and hematologic disorders before the diagnosis is considered. The entity is properly limited to abnormal endocrine reproductive relationships.

CURRENT CONCEPTS OF PATHOLOGICAL PHYSIOLOGY

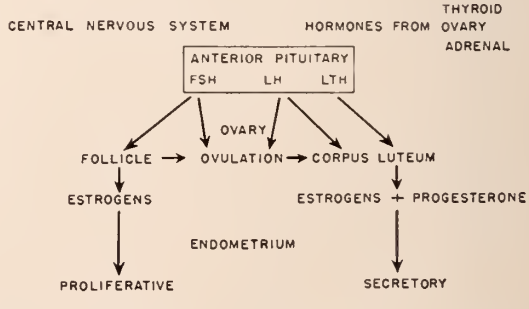
Characteristic constitutional features typify many of these patients. Obesity, short stature, and a slight degree of hirsutism are often noted. Family histories of thyroid dysfunction and diabetes are frequently elicited. On the other hand, severe prolonged emotional stress and nutritional deficiency can modify endocrine function sufficiently to produce this disorder in patients of all types and make-ups.[1]

Dysfunctional bleeding is occasionally encountered during puberty. At this time the endocrine and reproductive organs are immature and hormonal activities erratic and incomplete. It is not infrequently encountered during the menopausal years as ovarian function wanes, but the majority of cases occur during the active reproductive period.

The faulty impression is widespread that severe dysfunctional bleeding is irreversible, and that a majority of patients must look forward to recurrence of abnormal bleeding and infertility. Follow-up studies, however, have revealed that this gloomy attitude is not justified. Normal menstrual function can be established in more than one-half of these patients, and serious blood loss can be prevented in most of the remainder by judicious therapy.

In order to understand the alteration of hormonal balance thought to be present in dysfunctional bleeding, a brief review of the normal menstrual cycle is in order. This is diagrammed in Figure 1. The follicle stimulating hormone from the anterior pituitary stimulates the Graafian follicle to produce estrogens which then induce proliferative changes in the endometrium. With liberation of luteinizing hormone from the anterior pituitary, ovulation occurs and corpus luteum transformation of the follicle begins. Secretion of

Figure 1 NORMAL MENSTRUAL FUNCTION



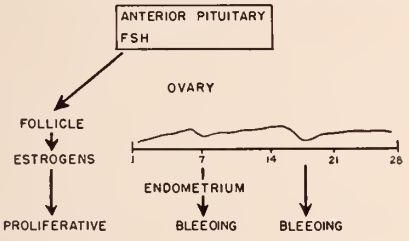
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the luteotrophic hormone maintains the corpus luteum which produces estrogens and progesterone. These stimulate secretory changes in the endometrium. As the corpus luteum ages, hormone production falls and the vascular support of the endometrium fails. The endometrium sheds in the menstrual flow.

Figure 2 illustrates the situation in

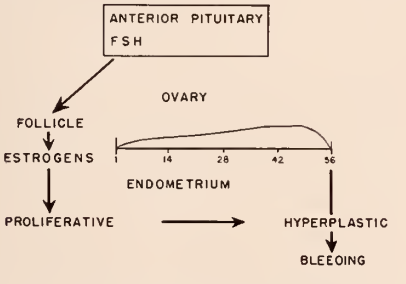
Figure 2 DYSFUNCTIONAL BLEEDING DUE TO FAILURE OF OVULATION WITH IRREGULAR ESTROGEN PRODUCTION



pubertal, post partum, and some menopausal patients. Here the pituitary does not produce adequate amounts of luteinizing or luteotrophic hormones. Follicles are stimulated, but ovulation and corpus luteum transformation do not occur. Estrogens are produced in irregular fashion. Whenever a significant drop in estrogen production occurs, vascular support for the endometrium fails and withdrawal bleeding occurs.

A variation of this same mechanism is illustrated in Figure 3. Here the estrogen

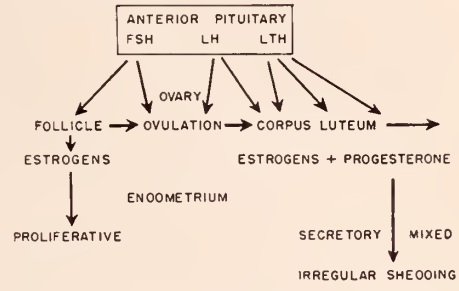
Figure 3 DYSFUNCTIONAL BLEEDING DUE TO FAILURE OF OVULATION WITH CONTINUOUS ESTROGEN PRODUCTION



production is maintained beyond the length of the normal cycle with continued proliferation of the endometrium. No vaginal bleeding occurs through several cycles. The endometrium becomes hyperplastic. Estrogen production finally wanes and withdrawal bleeding ensues with prolonged profuse shedding of the hyperplastic endometrium.

Figure 4 illustrates a rather uncommon

Figure 4 DYSFUNCTIONAL BLEEDING DUE TO PERSISTENCE OF CORPUS LUTEUM



mechanism of the production of prolonged profuse menstruation. Here the corpus luteum is maintained beyond its normal span by continued production of luteinizing and luteotrophic hormones. Progesterone production falls but is maintained at a reduced level. Some of the secretory glands disintegrate and shed, while others are maintained. New follicles from the next cycle are ripening and producing estrogens. This renews proliferation in the stumps of the shed glands. Curettage on the seventh or eighth day of such bleeding reveals the microscopic picture of irregular shedding characterized by both secretory and proliferative changes in the endometrium.

It should be emphasized that it is improper cycling of pituitary secretion which appears to be at fault in these mechanisms. Failure of ovulation alone usually produces bleeding indistinguishable from normal menstruation.[2] It is the irregularity of pituitary secretion which results in dysfunctional bleeding.

DIAGNOSIS

In the initial work-up of these patients, special emphasis is placed upon detection of associated endocrine abnormalities. BMR determinations are indicated. Hypothyroidism can result in excessive irregular bleeding, and therapy with dessicated thyroid is specific.

Detection of glycosuria demands performance of a glucose tolerance test. Dysfunctional bleeding in the diabetic frequently responds only to control of the diabetes.

A complete blood count is essential. Significant degrees of anemia impair endocrine function, and therapy is frequently ineffective until the anemia has been corrected. Inadequate numbers of platelets indicate search for other evidence of thrombocytopenic purpura, which frequently presents irregular uterine bleeding as an initial manifestation.[3] Leukemia may also produce this disorder as its presenting symptom.

Recently a defect in the clotting mechanism in the blood of some patients with irregular bleeding has been detected. This defect has been postulated to be due to the presence of a heparin-like substance. It can be demonstrated by protamine titration, and can be counteracted by the use of toluidine blue and similar dyes. A recent critical study indicates that this defect is very rarely present in patients with true dysfunctional bleeding.[4] Therefore, routine use of these dyes is of little or no avail in this disorder. Certainly, empiric uses of dye therapy as a substitute for diagnostic study should be discouraged.

DIFFERENTIAL DIAGNOSIS

In our experience the condition most often confused with dysfunctional bleeding is threatened or incomplete abortion of an early pregnancy. It should be emphasized that endometrial hyperplasia often presents signs and symptoms identical with those of early pregnancy.[5] Amenorrhea of one or two months' duration, tenderness of the breasts, slight enlargement and softening of the uterus and excessive or irregular uterine bleeding are as characteristic of endometrial hyperplasia as of threatened abortion. Occasionally, repeated episodes of irregular bleeding regarded as dysfunctional have eventually been proved by curettage to have been caused by retained placental fragments. These fragments can be recognized as causing abnormal bleeding for as long as a year after an incomplete abortion. Small submucous myomas give rise to irregular bleeding without producing changes in the external contour of the uterus. Endometrial polyps likewise give no external clue to their presence. In the later reproductive and menopausal age groups malignancy must always be considered as a possible cause of abnormal bleeding. Whenever ovarian tissue has been destroyed or the cortex altered by pelvic inflammatory disease, follicle maturation and rupture and estrogen production may be interfered with. Irregular bleeding from erratic estrogen stimulation of the endometrium may result. Hormonal therapy cannot alter the fibrotic changes in the ovaries, and is generally considered contraindicated in this disease. Irregular bleeding associated with endometriosis should be managed by a different routine of hormonal therapy, if such a mode of treatment is chosen.

The only satisfactory way to rule out organic conditions is to perform a careful pelvic examination under anesthesia, and to follow this with a meticulous curettage.

TREATMENT

In all these patients correction of abnormalities discovered during the initial study should be attempted. Significant anemia impairs endocrine function, and therapy is frequently ineffective until it is successfully treated. Adequate nutrition is necessary. If obesity is marked, weight reduction alone is sometimes effective in restoring normal function. Many clinicians employ thyroid almost routinely in the initial stages of treatment whether or not evidence of hypothyroidism is present.

Treatment may be designed to attain several objectives—immediate hemostasis, prevention of recurrent profuse bleeding, and the return of normal function and fertility. To accomplish these objectives there are available three therapeutic approaches—surgery, irradiation, and administration of hormones. Since the objectives vary in relative importance with the age of the patient, these therapies will be evaluated in terms of their applicability to the *pubertal, active reproductive,* and *menopausal* groups.

In the *pubertal* group normal function

is to be anticipated as maturity is attained. Treatment is indicated only when blood loss is profuse and repeated transfusions necessary. Hemostasis is the prime objective. Since most of the conditions discussed under differential diagnosis are uncommon in this group, work-up may be simplified. A complete blood count, bleeding and clotting times, platelet count, pregnancy test, and rectal and vaginal examinations are indicated. If these suggest no organic pathology hormonal therapy may be instituted. Curettage is a traumatic event for the younger patients and can be dispensed with except for those few in whom hemostasis cannot be attained by hormonal therapy.

Bleeding can be controlled by administration of estrogens. Stilbestrol 15 to 25 mg. administered intramuscularly daily for three or four days will induce growth of proliferative endometrium and stop bleeding within forty-eight hours. Progesterone in oil, 25 mg., is then administered intramuscularly on alternate days for three doses. Three or four days later withdrawal bleeding accomplishes a medical curettage. It is to be expected that bleeding at this time will be profuse. With onset of bleeding cyclic therapy should be started. This includes oral stilbestrol, 1 mg. daily for twenty-one days, and progesterone in oil, 25 mg., given intramuscularly on the twenty-first, twenty-third, and twenty-fifth days. Withdrawal bleeding usually occurs on the twenty-eighth day. Bleeding occurring during the period of medication calls for increase in dosage of stilbestrol. This therapy is continued through three cycles and stopped. Normal function usually ensues. It may be necessary to continue cyclic therapy of progesterone for a few cycles if abnormal bleeding recurs.[6]

During the *active reproductive period* an initial curettage should precede any other form of therapy. A single curettage is successful in controlling abnormal bleeding permanently in about one third of this group. Removal of the endometrium stops bleeding, but in itself has no effect upon pituitary or gonadal function. It is effective as a single therapeutic measure only when the altered function is easily reversible and transitory. The first menstrual period following curettage is usually irregular in some way. It may be early or late, and is frequently profuse. The subsequent two or three periods may also be abnormal. For this reason the effectiveness of curettage can be evaluated only over a period of several months. Following curettage, if histological examination reveals proliferative or hyperplastic endometrium the patient should be followed with basal temperature charts. Endometrial biopsies should be performed at the onset of subsequent bleeding to see if ovulation is occurring. If it is not after four or five months, institution of cyclic therapy as previously outlined is indicated.

The rationale for this therapy is twofold. First, it rests the pituitary and ovaries. Estrogens suppress the secretion of pituitary gonadotropins. The follicles are thereby freed from stimulation. Secondly, progesterone given in one cycle enhances the proper balance of pituitary gonadotropic secretion necessary for ovulation in the succeeding cycle. Following three cycles of this therapy normal pituitary-ovarian function frequently is resumed. This therapy may be compared to pushing a car with a rundown battery in order to get it started. If the battery is not too far gone, and if the engine runs long enough to charge it, the old bus will start off all right the next time. Similarly, if there is no organic disease of the pituitary, it will frequently resume normal gonadotropic function after a few months' rest.

Androgens have been used in a similar fashion in this group. They suppress pituitary function, release the follicles from stimulation, and produce withdrawal bleeding similar to that following cyclic therapy. The dosage employed is 25 mg., intramuscularly, once or twice a week until bleeding is controlled. It should not be given in excess of 200 mg. in a month's time. It is contra-indicated in

unmarried patients and those with hirsutism.

Chorionic gonadotropins, extracted from pregnant mare's serum and urine, and from human pregnancy urine, were the first sex hormones available for use in this condition. None of these preparations induce ovulation or corpus luteum formation in human beings. In general, the use of these preparations is declining.

As yet, no pituitary gland extract with potent gonadotropic activity is available.

Recently cortisone, in dosage of 12.5 to 25 mg. daily for six months, has been used in the treatment of a group of patients with anovulatory cycles and increased seventeen ketosteroid excretion.[7] Ovulatory cycles resulted in a significant proportion. Further study may reveal definite indication for cortisone therapy in some cases of dysfunctional bleeding.

Patients with irregular shedding of the endometrium respond best to repeated curettage.

X-ray irradiation of the ovaries has been used in the management of dysfunctional bleeding during the active reproductive period. It is effective in controlling bleeding if the dosage is adequate, but the loss of reproductive function and the frequent occurrence of severe menopausal symptoms make this a poor choice of therapy. Small doses of irradiation to the pituitary have been credited with producing ovulation in some cases. Use of this therapy should be restricted to those few radiologists who have had extensive experience with this procedure.

There are a few patients in the group under discussion who continue to bleed excessively and alarmingly in spite of repeated curettage and extensive hormonal therapy. Hysterectomy may have to be considered as an alternative to repeated massive transfusions.

In the *menopausal* group dysfunctional bleeding is frequently associated with significant pelvic relaxation and other pelvic pathology. In these patients, hysterectomy with repair of the pelvic floor and removal of other lesions is indicated after curettage. In the absence of associated pathology conservatism is in order. Curettage should be repeated at least once, and blood loss should be significant before hysterectomy is deemed unavoidable.[8] Androgens may be used to effect hemostasis. Cyclic use of estrogens and progesterone in this group is generally contraindicated.

Intracavitary radium following diagnostic curettage has been used extensively and is advocated by many for menopausal dysfunctional bleeding. Such therapy is usually satisfactory in controlling the bleeding. However, recurrent bleeding and pyometra occur not infrequently following this treatment. A high incidence of endometrial carcinoma has been noted in patients who have received radium therapy for menopausal hyperplasia. The question as to whether or not irradiation therapy had a cancer-stimulating effect in these patients cannot be answered at present. With the growing safety of surgical procedures there is an increasing tendency to limit the use of irradiation therapy for this benign disease to those few patients for whom surgery is contraindicated.

SUMMARY

The entity of dysfunctional uterine bleeding has been defined, current concepts of pathological physiology outlined, diagnosis and differentiation considered, and therapy evaluated. It is hoped that such a review may be of some aid in planning the management of these patients.

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DISCUSSION

Dr. Milton L. McCall (New Orleans): Dr. Mickey has given us an excellent resume of the present day scientific approach to the confusing problem which is known to us as dysfunctional uterine bleeding. His approach through basic endocrine physiology and the pathologic physiology of anomalous endocrine secretion has helped us all, I am sure, to think more clearly about this abnormality.

The author gave proper emphasis to the fact that most irregular bleeding is due to organic disease and that all studies, including careful curettage, must be carried out in all such cases. In this way only may we discover the harmless benign endometrial polyp (for the lack of which diagnosis by simple D. & C. many an unnecessary hysterectomy has been done). It was pointed out that incomplete abortion is asociated frequently with abnormal bleeding some time after the original abortive episode. With this I thoroughly agree and am convinced that D. & C. should be done on all uninfected cases of early abortion thus preventing the all too frequent development of protracted blood loss and anemia as well as infection resulting in repeated hospitalization and blood transfusions.

The treatment of dysfunctional uterine bleeding itself has been presented in a conservative fashion. It is perfectly true that a particular bleeding episode may be treated successfully in almost every patient with this condition whether this be brought about with large doses of estrogens, progesterone, testosterone or by D. & C. The difficult problem is the establishment of a normal menstrual cycle thereafter and Dr. Mickey has described means of doing this which are frequently successful. Of course, it is true that our greatest need is a potent gonadotropic preparation capable of bringing about completely normal ovarian function. This we do not have. In the meantime, cortisone has not proved to be the answer and its frequent severe and poorly understood side effects seem to outweigh the occasional benefit it may provide. On the other hand, the administration of thyroid extract (especially when associated with reduction of obesity) is frequently extremely helpful and may be used for all true dysfunctional bleeders who do not have hyperthyroidism. And we should remember that hyperthyroidism itself may be associated with copious uterine bleeding, and when present therapy with iodine preparations and propylthiouracil may be most beneficial.

Finally, a word about hysterectomy. This operation definitely is not indicated as a therapeutic measure for dysfunctional uterine bleeding except in the occasional patient. Every possible medical means and repeated curettments must have failed and unusually severe bleeding be present before hysterectomy is indicated in the younger age group. At the time of menopause, D. & C. should always be done before extirpation of the uterus is decided upon so that those patients whose symptoms are actually due to early malignancy of the uterus may have the advantage of more definitive therapy.

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REMOVAL OF SCARS BY ABRASION, AN OFFICE PROCEDURE *

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Certain new and somewhat revolutionary technics for correction of cosmetic defects have been developed during the past several years. Widespread publicity and dramatization of this subject in the lay press would seem to justify at this time an evaluation of the efficacy and limitations of these procedures. The following presentation will include a review of the basic underlying principles and actual technical procedures of abrasive surgery as it is performed today. My own experiences will include certain personal modifications developed in over 100 abrasions performed during the past two years.

METHOD

Cosmetic dermatology is a well developed subspecialty. Some common technics currently employed as office procedures include scarification, electrodesiccation, use of carbon dioxide in solid or slush form, use of liquid nitrogen, and topical use of phenol and trichloroacetic acid. Sandpaper abrasion, basically similar to these procedures, was reported by Iverson [1] in 1947 and McEvitt [2] in 1950. It consists in simple sanding of the skin under general anesthesia. A "wet or dry" type of paper is cut and wound about a standard 2 inch roll of gauze, fixed by a rubber band, and is then sterilized. The skin is pulled taut and vigorously scrubbed

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until there is a "welling up" of blood. Sanding is repeated until the desired smoothness is obtained.

Certain inherent disadvantages in this method were recognized early in its use. For one thing, there is the risk involved in use of a general anesthetic for an elective reconstructive procedure, which may be inadvisable. For another, the cost of hospitalization is an expense to the patient which must frequently be repeated by the necessity of resanding. Furthermore, basically, the sanding of broad surfaces does not allow for selectivity and encompasses uninvolved as well as involved skin. Finally, foreign body silica granulomata may occur.

To circumvent the disadvantages of hospitalization and general anesthesia, I began employing the following technic two years ago in my office. For this a minimum of equipment and little skill is required. An operative area no larger than 3 square inches was found to be most suitable. A 2 per cent solution of procaine hydrochloride is injected into the skin in a manner to produce a wheal-like, firm operative surface. Disadvantages of the sandpaper roll are overcome through use of a motor and mandrel equipped with the type of sandpaper disks used by dentists. Although preferable to cones, steel burrs, and carborundum stones, these sandpaper disks resulted in clogging of the abrasive surface. With such tools it is imperative to stroke the skin in a motion perpendicular to the line of motion of the disk and to hold the handle at a 45 degree angle, the flat surface of the disk being pressed against the skin. The edge of the disk, however, through its tendency to dig into relaxed skin, may be a mutilating weapon if not properly controlled. This technic is still being used for limited lesions and, in some cases, even without an anesthetic, but for more extensive areas another procedure has been adopted.

In 1953 Kurtin [3] reported a technic which eliminated many of the drawbacks of the sandpaper method. This method, utilizing the abrading action of a revolving wire brush, not only accomplishes abrasion of lesions but also removes the entire epidermis. New skin then regenerates from rete pegs in superficial abrasion and from follicular epithelium in deep planing. Ethyl chloride as the local anesthetic affords a resistant surface and a relatively bloodless field. Standard equipment, which is somewhat expensive, includes:

1. Stainless steel brushes of various diameters
2. Electric motor capable of producing 12,000 r.p.m.
3. Air blower to accelerate freezing
4. Standard coarse ethyl chloride sprays
5. Pre-chilling packs to remove sting of ethyl chloride
6. Accessories (not required)
   a. Protective shields
   b. Spray localizers
   c. Protective gowns

For the past five months I have used this method and equipment for routine abrasion. Photographs are taken before, after, and in some cases during treatment. It is impressed upon the patient that although complete removal may not occur, a satisfactory result is the rule. Operations are scheduled for one morning a week, during which time no other type of practice is performed. A suitable room is reserved for planing. Preoperative sedation has not been necessary, but any apprehension on the part of the patient can usually be alleviated by a thorough description of the technic. Patients are encouraged to discuss the procedure with others who have had planing.

If the operative field is near the hairline, the hair is shampooed the preceding night. Cosmetics are removed in women, and men are shaved. Pre-chilling packs, which have been in the refrigerator overnight, are applied by the patient in an adjoining room for a period of twenty to thirty minutes, in order to help relieve the sting and shock of ethyl chloride spray. Alcohol is used to cleanse the operative field. Lead shields are placed

over the eyes to protect against fragmentation of wires, and the nostrils are plugged with cotton. Some patients object to the odor of ethyl chloride; others have difficulty breathing through their mouths. As ethyl chloride is sprayed on the area to be treated, a stream of air from the blower is applied. Freezing to board hardness occurs within twenty to thirty seconds. The operative field is limited to 3 square inches to prevent thawing before completion of planing and to guard against frostbite of any unabraded areas. Planing is done as in shaving, with the use of an up-and-down stroke instead of a side-to-side motion, which produces grooving. Because thawing results in bleeding, it is preferable to begin abrasion at the most dependent portion, in order to avoid dripping of blood into the operative field. The appropriate depth of abrasion can be learned only by experience. Postoperative bleeding is controlled with sterile, dry gauze applied about twenty minutes after completion of the procedure. Dressings with antibiotic ointments (aureomycin ointment prepared) or vaseline gauze are changed daily. Healing takes place within ten to fourteen days, depending upon the degree of freezing, depth of abrasion, and viability of the tissue bed. Re-abrasion may



Figure 1. Before (a) and after (b) abrasion for acne scars.

be done after an interim of four weeks. Some patients have undergone as many as four planings.

RESULTS

In the evaluation of results, black and white photographs taken by a commercial photographer before and after the procedure are helpful from an objective as well as a subjective point of view. (Fig. 1). Improvement of 60 to 80 per cent may be expected. In a few instances the first abrasion may uncover scars of old, deep-seated acne lesions. Interestingly enough, patients are the most enthusiastic critics and are eager to have re-abrasion or to recommend it to their friends. Whatever hesitancy may be present prior to initial planing disappears at the second treatment, indicating lack of discomfort associated with the procedure. Some patients insist on additional planing, against the better judgment of the operator, who seeks to avoid devitalization or oversensitiveness of the skin from excessive freezing or too numerous planings. Finally, in abrasion, as in other dermatologic treatments, such as radiation therapy or cauterization, results vary, depending on the cutaneous site involved, being most successful on the face, in contrast to other bodily sites.

Defects other than scars of acne have



Figure 2. Before (a) and after (b) abrasion for pigmented nevus.

been treated successfully by abrasion. Accidental tattoo marks of the superficial variety respond well, but artistic tattoos, wherein the pigment is implanted deep within the corium, necessitate time-consuming, tedious procedures and result in some scarring. Nevertheless, abrasion seems to be the best method of removal whenever excision and graft are impractical. In one patient, a soldier with a dragon tattoo extending from the top of the shoulder to the elbow, removal required five hours of planing. Planing of the lower portion of this patient's arm was carried out so deeply as to produce small herniation of fat. This complication was avoided by less deep abrasion of the shoulder area, but results were consequently partially successful. Likewise, removal of a tattoo on the flexor aspect of the forearm of another patient resulted in herniations of fat and hypertrophic scarring.

Scars from trauma, chicken pox, and smallpox are readily improved by abrasion. Wrinkles about the eyes and mouth due to facial expressions, aging, and folding of the skin respond extremely well. Certain benign superficial nevi have also been treated. A pigmented nevus, measuring 1.5 cm. in diameter, on the cheek of a six year old boy had been partially removed by the scraping action of a fingernail during play. Normal skin along the 4 mm. linear scratch suggested removal by abrasion, which was performed without any ensuing scarring. (Fig. 2). A less desirable result was obtained in the abrasion of a similar lesion on the thigh of a girl, in whom there was a protracted healing and keloid reaction requiring roentgen-ray therapy. Surgical removal undoubtedly would have been a better procedure.

Whereas I have not had any personal experience with treatment of any vascular nevi or portwine stains, they have been successfully abraded by others. Possibly the rare "bathing trunk" nevus, a therapeutic challenge to all, may be treated by abrasion. Keloids, which appear occasionally as complications of abrasions, may also be planed and treated subsequently with roentgen-rays. In one instance, in which a spontaneous keloid was abraded and not treated prophylactically with roentgen-rays, it recurred, but regrowth was less extensive than that seen following surgical removal of a similar lesion. Other defects which I have abraded successfully include lentigines, chloasma, keratoses, adenoma sebaceum, acne keloid, and skin graft sites.

SUMMARY AND CONCLUSIONS

Abrasive surgical removal is the treatment of choice for certain skin defects. Basically, the technic consists in abrading the skin with a sandpaper disk or planing with a revolving wire brush. Experiences with its use over the past ten years have led to certain modifications in method. Planing by the wire brush method is preferable to sandpapering and is suitable and successful as an office or out-patient method of correcting skin defects.

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VOLUNTARY PREPAYMENT HEALTH INSURANCE COVERAGE IN THE UNITED STATES

With more than two-thirds of the nation insured under some form of voluntary prepayment health insurance, the facts and figures in this field become of importance to every physician. Recently, two publications give a valuable summary of the status of this type of insurance. These are Annual Report Council on Medical Service "Voluntary Prepayment Medical Benefit Plans", and "The Eighth Annual Survey" Health Insurance Council.[1,2] This insurance Council is a confederation of nine trade associations in the insurance field, and its activities are focused chiefly on the relations of the insurance business with physicians, hospitals, and with other professionals in matters of health. These associations represent more than 200 companies which collectively account for over seven-eighths of the total accident and health business in the United States.

Consideration of the figures presented in this report gives support to the previously expressed opinion that this method of financial arrangement for medical care would introduce an additional factor into the private practice of medicine, which in turn would present a threat of dominating the relationship between physician and patient. For this reason, the physician has a major interest in the development and operation of these voluntary prepayment medical benefit plans. As of mid-November past, 103 million persons have voluntary health insurance against hospital expenses. About 88 million now carry surgical expense protection, and 47 million have basic medical expense protection.

There was an increase in the total number of persons covered in each of these three types in the past year; this increase was out of proportion to the growth in population. The total benefit payment exceeded two and a half billion dollars. More than half went to help meet hospitalization expenses, and more than 675 million went for operations and medical care. A half billion was paid to policy holders by insurance companies for loss of income due to disability. Fifty-six per cent of the total came from insurance companies which paid out 1.4 billion, including loss of income benefits. The Blue Cross and Blue Shield types paid nearly one billion, or 37 per cent of the total.

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[1] Annual Report, Council on Medical Service, American Medical Association Voluntary Prepayment Medical Benefit Plans, 1954.

[2] The Health Insurance Council, Eighth Annual Survey, The Extent of Voluntary Health Insurance Coverage in the United States, as of December 31, 1953.

Thirty-eight million workers had protection at the close of 1953 against loss of income due to disability. This figure represents 60 per cent of the total civilian labor force in the nation at the time.

The newest form of voluntary health insurance, major medical expense insurance (catastrophic coverage) is shown by the survey to protect more than 1.2 million persons at this time. It is a gain of nearly 80 per cent during the past year.

The Department of Commerce estimates the total U. S. Health Bill as 12 billion dollars. A Social Security Administration study of voluntary health insurance in 1953 disclosed about 20 per cent of all medical costs were paid by health plans. This survey estimated the 1953 private medical bill at $9,866,000,000, and payments for benefits at $1,919,200,000. Expenditures for hospital service alone were covered to the extent of 41 per cent, and physicians' services alone were covered to about 21 per cent. However, physicians' bills accounted for less than one-third (28.6 per cent) of all private medical costs; while hospital bills made up 29 per cent; medicine and appliances 22 per cent; dentists' fees 9.6 per cent; other professional services 5.7 per cent; and health insurance itself, 4.9 per cent.

The addition of a federal government "sound reinsurance program" to bolster and expand coverage under voluntary health insurance plans has been proposed by Secretary of Welfare, Ovetta C. Hobby, and supported by President Eisenhower's administration. The proposal is suggested as a form of supplementary coverage providing "insurance against compulsory health insurance". This plan was opposed by the American Medical Association, and defeated in the last Congress. In a speech delivered by Senator Hobby before the House of Delegates of the American Medical Association, in Miami, on November 29, 1954, it was again proposed.

It may be anticipated that such legislation will be introduced in the next Congress. It is evident from the operation of the voluntary type of insurance extending into billions, and increasing yearly, that it needs no subsidy. It is difficult to see how the re-insurance proposal would work, except as a subsidy to the indigent. If the federal reinsurance were to subsidize insurance payments for the indigent the plan would move irresistibly into the field of state medicine within a few years.

It should be the business of the profession to maintain a watchful attitude on the whole field of voluntary prepayment health insurance, and at the same time oppose any form of governmental entry into this field. Voluntary prepayment health insurance is the answer that private enterprise gives to proposals to establish state medicine. It is to the interests of physicians as a whole that they should on the one hand cooperate with the voluntary insurance to see that it is properly maintained; and on the other hand, watch that it does not try to dominate the doctor-patient relationship.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1955 ANNUAL MEETING

Dr. Edgar Hull, President of the Orleans Parish Medical Society, has appointed Dr. J. Theo Brierre Chairman of the Committee on Arrangements for the 1955 Annual Meeting. Dr. Brierre very ably served as Chairman for the 1954 Meeting following the death of Dr. W. H. Roeling a very short time prior to the date of the meeting and his interest, cooperation and ability were of such value as to warrant his reappointment for our next meeting. The Secretary-Treasurer and Dr. Brierre have already arranged for hotel facilities, including meeting rooms and 300 rooms at the Roosevelt Hotel for doctors planning to attend

and an ample number of rooms at other hotels will also be available. Reservations will be handled through the Secretary-Treasurer's office and forms will be furnished for this purpose shortly after the first of the year.

ADDITIONAL APPOINTMENTS

Since publication of the list of Chairmen for Scientific Sections in the November issue of the Journal, the following have been appointed by President Walter Moss:

EAR, NOSE AND THROAT

Ben Fendler, M.D., Alexandria

EYE

Leon F. Gray, M.D., Shreveport

OBSTETRICS

H. P. Hewitt, M.D., Lafayette

ORTHOPEDICS

A. R. Altenberg, M.D., Monroe

UROLOGY

B. E. Trichel, M.D., Shreveport

REPORT ON ACTIONS OF THE HOUSE OF DELEGATES AMERICAN MEDICAL ASSOCIATION EIGHTH CLINICAL MEETING NOV. 29-DEC. 2, 1954 MIAMI, FLORIDA

Geriatrics, medical ethics, internships, grievance committees, hospital accreditation, osteopathy, the doctor draft law, state-subsidized medicine and malpractice insurance problems were among the major subjects of discussion and action by the House of Delegates at the American Medical Association's Eighth Clinical Meeting held Nov. 29-Dec. 2 in Miami.

During the meeting the A.M.A. Board of Trustees also announced the appointment of a 13-member Commission to make a comprehensive survey of the various types of plans through which the American people receive medical services. The Commission, headed by Dr. Leonard W. Larson of Bismarck, N. D., member of the Board of Trustees, will begin work immediately and will require at least a year to complete its survey.

Named as the 1954 General Practitioner of the Year was Dr. Karl B. Pace of Greenville, N. C., whose selection by a special committee of the Board of Trustees was announced at the opening session of the House of Delegates on Monday by Dr. Dwight H. Murray of Napa, Calif., Board Chairman. Dr. Pace received the medal and citation, presented annually for community service by a family doctor, from Dr. Walter B. Martin of Norfolk, Va., President of the American Medical Association, immediately after the announcement.

Other highlights of the opening session were addresses by Dr. Martin; Mr. Seaborn P. Collins, National Commander of the American Legion; Mrs. Oveta Culp Hobby, Secretary of Health Education and Welfare, and Mr. Edwin J. Faulkner, President of the Woodmen Accident and Life Company of Lincoln, Neb.

Mr. Collins told the House that he is willing to appoint qualified Legion representatives on a committee to take part in joint Legion-A.M.A. study of veterans' hospitalization. Later during the meeting the Board of Trustees announced appointment of a three-man committee to meet with the Legion on the issue of veterans' medical care. The members of the A.M.A. committee are Dr. Elmer Hess, Dr. David Allman and Dr. Louis Orr.

Registration toward the end of the third day of the Clinical Meeting included 3,167 physicians; 3,441 guests including residents, interns, nurses and others, and approximately 900 exhibitors and exhibitors' guests—for a grand total of more than 7,500. Final total registration at the 1953 Clinical Meeting in St. Louis was 7,716.

NEW A.M.A. GERIATRICS UNIT

The House of Delegates passed a Pennsylvania resolution which directed that the A.M.A. Board of Trustees "consider the creation of an organization on geriatrics within the present structure of the American Medical Association, the purpose of which shall be (1) to develop and assist committees on geriatrics and gerontology originating from constituent state associations and component county societies of the American Medical Association; (2) to act as a liaison between such state and county committees so there shall be a free flow of information between all levels of organized medicine on the subject of geriatrics; (3) to make available to the American people such facts, data and opinions concerning the subject of geriatrics as may be considered of value in alleviating social and medical problems created by the increasing population of older age groups; and (4) to perform such other duties as will improve and advance the medical care rendered to people of the older age group."

MEDICAL ETHICS

Accepting a recommendation in a report of the Council on Constitution and Bylaws, the House amended Section 7 of Chapter I of the Principles of Medical Ethics so that it now reads as follows on the subject of patents and copyrights:

"A physician may patent surgical instruments, appliances and medicines or copyright publications, methods and procedures. The use of such patents or copyrights or the receipt of remuneration from them which retards or inhibits research or restricts the benefits derivable therefrom is unethical."

In another action involving medical ethics, the House rejected a Kansas resolution which would have removed Section 8 of Chapter I from the Principles of Medical Ethics. The Reference Committee on Miscellaneous Business, in recommending disapproval of the resolution, said that "the American Medical Association would fail to assume a vital responsibility if no provision is included in the Principles of Medical Ethics re-

garding the problem of ownership of drug stores and dispensing of drugs by physicians. . . . It is possible that some phases of this principle are susceptible of amendment or change, but certainly the entire principle should not be discarded."

REPORT ON INTERNSHIPS

Acting on the report of the Ad Hoc Committee on Internships, the House accepted a recommendation of the Reference Committee on Medical Education and Hospitals that "the data and judgments of the Ad Hoc Committee on Internships will provide valuable guidance to the Council on Medical Education and Hospitals and with this in view it is recommended that the report be referred to the latter for their further study and guidance." Following are a few excerpts from the report of the Ad Hoc Committee on Internships:

"It is our opinion that graduates of foreign medical schools should be considered for intern appointment in approved hospitals only when there is satisfactory evidence that:

"1. Language difficulties will not seriously impair the program.

"2. The same educational standards are applied to graduates of foreign schools as to graduates of approved American medical colleges.

"3. The appropriate state licensing board approves. . . .

"The Committee believes that the present standards detailing only the number of annual admissions, autopsy rate, number of beds and assignment of an intern to from 15 to 25 beds, are without significant meaning unless and until every local situation is reviewed 'on the grounds' and with full opportunity for discussion between the representative of the accrediting body and representatives of the hospital's governing board and its medical staff. . . .

"Had the 'two-thirds rule' remained a requirement and been rigidly applied to the two consecutive intern years 1952-3 in combination with 1953-4 it would have removed 448 hospitals, cancelled 4,205 internships to which 784 students were matched in those years and reduced the number available to 6,766. . . .

"The committee suggests consideration of some requirement based on filling a percentage of approved internships and a time limit to eliminate some of the unhealthy aspects of the present situation. The following requirement is recommended: Any internship program which in two successive years does not obtain one-fourth of its stated intern complement be disapproved for internship training.

"As applied to the figures for 1952-3 in combination with 1953-4, this requirement would have removed 277 hospitals, cancelled 2,139 internships to which 80 students were matched in those years and reduced the number of internships available to 8,832."

GRIEVANCE COMMITTEES

In order to improve efficiency and maintain high standards in the operation of grievance or mediation committees, the House endorsed the principles of two similar resolutions introduced by the Colorado and Mississippi delegations and asked the Board of Trustees to appoint a committee to study and report on recommended standards for the operation of such services. Both resolutions had emphasized the valuable public service aspects of grievance committees and had suggested that the committee appointed by the Board of Trustees be composed of representatives from constituent societies in which grievance committees have been effective and useful.

HOSPITAL ACCREDITATION

In place of an Indiana resolution protesting certain situations arising in connection with hospital inspections, the House adopted the following substitute resolution to resolve the problems in question:

"Resolved, that the Secretary of the American Medical Association be directed to request that the Joint Commission on the Accreditation of Hospitals supply a copy of the letter of notification regarding the results of the survey of each hospital to the Hospital Administrator, to the Chief of the Professional Staff and to the Chairman of the Governing Board of the hospital."

OSTEOPATHY

The House concurred in the following supplementary report of the Board of Trustees on the osteopathic situation:

"Contingent on the receipt of the report from the Committee to Study the Relations Between Osteopathy and Medicine of its 'on campus' observations of osteopathic schools, the House of Delegates in June, 1954, agreed to hold in abeyance any action on this important subject until this meeting.

"The Committee, after meetings and extensive negotiations with the American Osteopathic Association, has now made final arrangements for visiting five or six schools of osteopathy, and these plans have been approved by the Board of Trustees.

"It is the recommendation of the Board, therefore, that consideration of this matter be held in abeyance by the House of Delegates until the June, 1955 meeting, at which time the Committee expects to have a complete report of its findings concerning the nature, scope and quality of education in schools of osteopathy."

THE DOCTOR DRAFT LAW

The Reference Committee on Medical Military Affairs considered several reports and resolutions involving the doctor draft law, and then proposed the following policy statement which was adopted by the House of Delegates:

"(A) That on the basis of current information the House of Delegates commend and express itself as being in complete accord with the Board

of Trustees and its Council on National Defense that the 'Doctor Draft Law' should not be extended after June 30, 1955, and that the House of Delegates further express its confidence in the ability of the Board of Trustees and its Council on National Defense to properly handle any new situation which may develop in regard to this highly complex and involved problem.

"(B) That the Board of Trustees and its Council on National Defense continue to study the problem of providing the best possible medical service for members of the armed forces and that they make recommendations to the Department of Defense at the earliest possible time for a more permanent solution to the problem, giving special attention to the further development of a career medical corps with adequate compensation therefor."

STATE-SUBSIDIZED MEDICINE

Most controversial issue at the Miami meeting was a resolution on "Policy on Medical Practice by Tax Supported Medical Schools," introduced by the Mississippi State Medical Association. This resolution provided that:

"The American Medical Association reaffirm its unalterable opposition to socialized and state subsidized medicine regardless of the form which it may assume, and

"The House of Delegates of the American Medical Association is of the opinion that these principles should be considered by constituent and component medical societies together with all other facts pertinent to the local situation in all controversies arising in the employment of medical faculty by state (tax) supported medical schools and be fully considered in effecting action within the framework of this policy."

The Reference Committee on Medical Education and Hospitals agreed with that portion of the resolution regarding "unalterable opposition to socialized medicine" but recommended that the resolution be referred, without approval or disapproval at this time, to the Council on Medical Service which currently is studying the various aspects of this subject. The House adopted the reference committee's recommendation.

MALPRACTICE INSURANCE

Two resolutions and a Board of Trustees supplementary report—all dealing with the problems and difficulties in obtaining satisfactory professional liability insurance—were considered together by the Reference Committee on Insurance and Medical Service. The House of Delegates accepted the reference committee report which said: "Inasmuch as the Board of Trustees has reported that there is in progress a study on the subject, we feel that we can well await the recommendations that the Board is planning to make at the next session. Due to the apparent emergency aspect of the problem, the Board of Trustees is urged to report to the membership as soon as possible, through its component societies, on the progress of this urgent study."

OPENING SESSION

Dr. Walter B. Martin, A.M.A. President, declared at the opening session that "medicine belongs to the people" and physicians are "merely the purveyors" of medical care. Dr. Martin stressed that physicians have an obligation to the people that "goes beyond our own private practice and into the community," and he also emphasized the importance of "continued effort to meet the medical needs of the low-income and other non-insurable groups."

Mr. Collins, the American Legion National Commander, said that "we are citizens first and doctors and veterans second," as he urged removal of the veterans' medical care issue "from the area of name-calling and propaganda." The American Legion, he declared, neither expects nor wants the Government to give carte blanche entitlement to medical care to all veterans.

Mrs. Hobby, presenting the case for the Eisenhower Administration's health reinsurance proposal, said: "The health reinsurance proposal represents what we believe to be a necessity. It offers opportunity for self-help without subsidy." Mr. Faulkner, however, expressed the opinion that the reinsurance program, "would be foredoomed to disappoint its proponents," and he declared that voluntary health insurance can bring satisfactory protection "to practically all of our people" without a Federal reinsurance program.

AWARDS AND CONTRIBUTIONS

At the closing session of the House of Delegates the American Medical Association received a citation for pioneering in helping to bring educational television to the American public. James Keller, Chairman of the Miami Citizens Committee for Educational Television, presented the award on behalf of the National Citizens Committee for Educational Television. Dr. Martin accepted the citation for the A.M.A.

At the same session the Utah State Medical Society, represented by Dr. George M. Fister of Ogden, presented a check for $10,355 to the American Medical Education Foundation to aid in relieving the financial plight of the nation's medical schools. The contribution was received by Dr. Louis H. Bauer, president of the foundation, who also announced that a check for $1,000 had been contributed by the Southern Medical Association.

1957 CLINICAL MEETING

Philadelphia was chosen as the place for the 1957 Clinical Meeting, the dates of which will be announced later. Invitations also had been received from Denver, Detroit, Mexico City and Washington, D. C. The Clinical Meeting will be held in Boston in 1955 and in Seattle in 1956.

HEALTH FAIR

As the A.M.A. Clinical Meeting came to a close on Thursday, Dec. 2, a health fair for the public

opened in Miami's Bayfront Auditorium under the auspices of the Dade County Medical Society. The fair, to be open through Sunday with more than 80 exhibits featured, marks the first time that such an event has been held in connection with the A.M.A. Clinical Meeting.

PUBLIC RELATIONS MEETING

The Public Relations meeting held during the American Medical Association Meeting in Miami, November 29—December 3, was presided over by Mr. Leo Brown, Director of Public Relations, and was addressed by Dr. Walter B. Martin, President of the AMA, and Dr. George Lull, Secretary. The essence of the meeting was that public relations, as far as the doctor is concerned, begin in the doctor's office as it is here that the lay public is first acquainted with the medical profession.

There was a rather frank discussion of medical fees and it was the consensus of opinion that the fee must be consistent with what the patient is able to pay and that the doctor should not hesitate to discuss fees with the patient if the patient so desires.

There is a great demand by lay organizations for speakers on medical and allied subjects. Therefore, each society should have speakers ready at all times to talk at any meeting on any medical subject. The Orleans Parish Medical Society as well as some of the other parish societies in Louisiana has a Speakers Bureau.

The AMA, through its Public Relations Department, has come out with a Public Relations Manual. This is a well-written book and deserves the attention of any parish society interested in Public Relations. The AMA has notified each parish society of the availability of this manual, requesting that any society desiring a copy contact the office of the State Society.

This was a very enjoyable meeting and it is hoped that the doctors of Louisiana will be able to hold up their part of the public relations program of the AMA.

W. ROBYN HARDY, M. D., Chairman
Council on Medical Service and Public Relations.

YOUR DIRECTORY INFORMATION CARD

The new, 19th Edition of the American Medical Directory is now in galley form, and it is expected that the book will be ready for delivery about the middle of 1955. The previous edition was issued in 1950. Since that time, it has not been possible to publish a new edition because changes in the membership structure of the American Medical Association made it difficult to obtain an accurate list of members.

Within the next few weeks, a directory information card will have been mailed to every physician in the United States, its dependencies, and Canada, requesting information to be used in compiling the new Directory. Physicians receiving an information card should fill it out and return it promptly regardless of whether any change has occurred in any of the points on which information is requested. It is urged that physicians also fill out the right half of the card, which section requests information to be used exclusively for statistical purposes. Even if a physician has sent in similar information recently, he should mail the card promptly to the Directory Department of the American Medical Association to insure an accurate listing of his name and address. There is no charge for publishing the data, nor are physicians obligated in any way.

The Directory is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, one may find dependable data concerning physicians, hospitals, medical organizations, and activities. It provides full information on medical schools, specialization in the fields of medical practice, memberships in special medical societies, tabulation of medical journals and libraries, and statistics on the distribution of physicians and hospitals in the United States.

If you desire that your name be properly listed in the 1955 Edition of the American Medical Directory, please fill out both portions of the information card forwarded to you by the American Medical Association, regardless of whether you have moved or changed your address. Even if you sent the Association similar information recently, mail this card today to insure the correct listing of your name and address. We suggest that you carefully read both sides of the card before you begin to fill in the information requested.

The new 19th Edition of the Directory will contain data on more than 240,000 physicians, including 200,000 corrections, and 20,000 more names. Since the last Edition was issued in 1950, the names of 40,000 new physicians have been added to the biographical records, and about 20,000 have been deleted because of death and other reasons.

Whatever you do, fill out the information card completely, whether you are an AMA member or not, in active practice, not in practice, or retired. You will be doing a service to yourself, your fellow physicians and the public by returning this card promptly.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

L.S.U. SPEAKERS AVAILABLE

The Louisiana State University School of Medicine announces the availability of speakers on a wide variety of clinical subjects and basic medical sciences, for meetings of Parish and District medical societies and of local chapters of the American Academy of General Practice. The School can provide single speakers for given meetings, furnish speakers regularly to meetings scheduled in advance, and assist in arranging the scientific programs of meetings for which several speakers will be needed. A small charge will be made to cover travel expenses of speakers and the administrative costs of this service.

A list of speakers and subjects and details of the service may be obtained by writing Dr. Edgar Hull, Assoc. Dean, 1542 Tulane Avenue, New Orleans 12.

POSTGRADUATE CONFERENCE

The Temple Division of the University of Texas Postgraduate School of Medicine announces its forthcoming *Medical and Surgical Conference* to be held March 7, 8, 9, 1955. The program, sponsored by the Scott, Sherwood and Brindley Foundation, will be presented in Temple by members of the Staff of Scott and White Clinic.

The Postgraduate Conference will be directed primarily toward the interest of the physician engaged in private practice. The morning sessions will consist of operative clinics directed by the surgeons, with consulting internists, radiologists, and pathologists participating; the afternoon sessions will be composed of round-table luncheon discussions, panels, symposia, and clinicopathologic conferences. A formal lecture will be presented each evening, with a banquet-lecture on the final night.

Registration forms are available from the office of the Assistant Dean, University of Texas Postgraduate School of Medicine, The Temple Division, Temple, Texas.

POSTGRADUATE COURSE AMERICAN COLLEGE OF CHEST PHYSICIANS

The Council on Postgraduate Medical Education of the American College of Chest Physicians, in cooperation with the respective state chapter of the College as well as the staffs and faculties of the local hospitals and medical schools of Philadelphia, will sponsor the Eighth Annual Postgraduate Course on Diseases of the Chest, to be held at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 7-11, 1955.

These postgraduate courses endeavor to bring physicians up to date on recent advancements in the diagnosis and treatment of heart and lung disease. Tuition is $75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH ANNOUNCES PUBLIC HEALTH SCHOLARSHIPS

Scholarships for the Academic Year 1955-56 will be granted to individuals of high professional promise in awards ranging from part tuition to tuition plus a stipend, according to the qualifications and financial needs of the applicants. The Scholarship Funds are limited and are primarily intended for citizens of the United States.

Scholarship applicants must be eligible for admission to the School as a candidate for one of the following degrees; Master of Public Health, Doctor of Public Health, Master of Science in Hygiene, Doctor of Science in Hygiene, Master of Industrial Health.

Scholarships are available to those in the following categories who wish to obtain postgraduate education in the field of public health or in one of the basic sciences related to public health:

1. PHYSICIANS, DENTISTS AND VETERINARIANS
2. INDUSTRIAL PHYSICIANS

3. PUBLIC HEALTH NURSES with a college degree and satisfactory field experience

4. SOCIAL WORKERS with a master's degree from an approved school of social work and acceptable experience in the field of medical or psychiatric social work

5. HEALTH EDUCATORS with the following background: college degree, training either in health education or in the natural and social sciences; experience in general education or community health work

6. COLLEGE GRADUATES who have concentrated in one of the *Natural Sciences* or in *Engineering* (environmental aspects).

A Catalogue of the School, Admission and Scholarship applications, and further information may be obtained by writing the Secretary, Harvard School of Public Health, 55 Shattuck Street, Boston 15, Massachusetts.

Scholarship applicants must return completed admission and scholarship applications to the Harvard School of Public Health by *March 1, 1955*. Scholarship awards will be announced May 1, 1955.

SEVENTH ANNUAL MEETING AMERICAN ACADEMY OF FORENSIC SCIENCES

The Seventh Annual Meeting of the American Academy of Forensic Sciences will be held in the Biltmore Hotel in Los Angeles on February 17, 18, 19, 1955. The President of the Academy this year is Dr. A. W. Freireich, Malverne, New York and the Chairman of the Program Committee is Dr. Milton Helpern, Chief Medical Examiner of the City of New York. The Law Department of the American Medical Association has long urged that the profession take an increasing interest in medicolegal problems and the programs of the Academy meetings are a definite step in that direction. Further information may be obtained by writing Dr. W. J. R. Camp, University of Illinois College of Medicine, 1853 W. Polk Street, Chicago, Illinois, Secretary, or Dr. Frederick D. Newbarr, 109 Hall of Justice, Los Angeles 12, California, Chairman of Local Committee on Arrangements.

7TH ANNUAL CONVENTION—INTERNATIONAL ACADEMY OF PROCTOLOGY

Plan now to attend the 7th Annual Convention of the International Academy of Proctology at The Plaza Hotel, New York City, March 23 to 26, 1955. The International, National, and Local Program Committees are planning an unusual seminar on anorectal and colon surgery. There will be special emphasis on anorectal presentations, and on panel discussions, as requested by those who attended the Chicago meeting in 1954.

Plans are being developed for wet clinics and lectures at the Jersey City Medical Center under the direction of Dr. Earl Halligan, surgeon-in-chief of the Medical Center.

Eminent speakers from all parts of the country and abroad will present interesting papers and motion picture demonstrations of their personal techniques. Mexico is expected to be very well represented at this meeting.

Please remember that all physicians and their wives are cordially invited to attend the annual conventions of the International Academy of Proctology, whether or not they are affiliated with the Academy. There is no fee for attendance at these teaching sessions of the Academy.

C. OF C. PUTS OUT BOOK ON MODERN HEALTH INSURANCE

A new book, entitled "A Look at Modern Health Insurance," has just been published by the U. S. Chamber of Commerce, 1615 H. Street, N.W., Washington 6, D. C. It presents the most complete up-to-date picture of the present status of voluntary health insurance in the United States, edited by a special committee of the Chamber of Commerce of the United States.

It is a symposium of articles by noted authorities in every aspect of health insurance.

The purpose of the book as outlined by the chairman of the committee is to make available a relatively complete story of the entire structure so that students of the subject may review this complex, diverse, and rapidly changing picture in one book. This objective has been effectively achieved.

A brief history of the development of voluntary health insurance is followed by a review of the nation's health record, the basic principles of health insurance, distribution of such insurance, the Blue Cross and Blue Shield movements, and other significant material. All physicians whose professional future depends in large measure on the nature of developments in this changing field should study this book and refer to it frequently as a text of authentic information.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled examination (Part I), written examination and review of case histories, for all candidates will be held in various cities of the United States, Canada, and military centers outside the continental United States, on Friday, February 4, 1955.

Case abstracts numbering 20 are to be sent by the candidate to the Secretary as soon as possible after receiving notification of eligibility to the Part I written examination.

Candidates are reminded at this time that lists of hospital admissions must accompany new applications and requests for reopening.

For further information contact: Robert L. Faulkner, M. D., 2105 Adelbert Road, Cleveland 6, Ohio.

GAMMA GLOBULIN SHOWN MORE EFFECTIVE

A re-study of gamma globulin shows that it is slightly more effective against poliomyelitis than it appeared before, it was reported today by a team of investigators aided by the National Foundation for Infantile Paralysis.

Laboratory tests, not available immediately after the 1951-52 field trials of GG, were used to re-analyze its value. Several changes in results appeared, according to scientists reporting in the Sept. 4 Journal of the American Medical Association.

Conclusions by officials evaluating GG after the field trials were that it gave significant protection. These officials later said that evidence from the 1953 mass inoculations of the serum did not demonstrate whether GG did or did not have any effect against polio. Dr. William McD. Hammon, Pittsburgh, a leading member of the investigators, said then that the serum "has an extremely limited application in the field of preventive medicine and will not produce dramatic results in general use." The investigators said no conclusions could be reached from this mass use of GG because the inoculations were not made under experimental control conditions.

OLD "HOME REMEDY" WARNED AGAINST

Drinking alfalfa seed tea not only won't cure arthritis but may give the drinker skin trouble and the doctor a headache.

A Roanoke, Va., physician said that the skin trouble is hard to diagnose unless the doctor knows his patient has been drinking the tea. The trouble is most patients apparently don't like to admit they've been relying on the old home remedy.

Dr. William H. Kaufman reported on two such cases in the July 17 Journal of the American Medical Association. He said he knows of no previous reports of skin trouble from alfalfa seed.

"The practice of taking alfalfa seed for the purpose of relieving arthritis, diabetes, and related disorders is apparently widespread," he said, "and there is a strong likelihood that further cases will appear."

He said two patients suffered skin eruptions as a result of the remedy and that four other possible cases have been found. One of his two patients, an elderly woman, said she had concealed the fact that she drank the tea because she was "ashamed to admit it." The other admitted "with great reluctance" that she used the tea.

The Council on Pharmacy and Chemistry of the A.M.A. said it has received numerous questions about the value of alfalfa preparations in treating arthritis and diabetes, Dr. Kaufman said. The council reports there is no evidence that alfalfa seed in any form will help.

NEW INSULIN

Eli Lilly and Company, which in 1923 produced the first commercial Insulin preparation, now is introducing for the first time in the United States Lente Iletin (Insulin, Lilly), a new kind of long-acting Insulin produced without the use of a foreign protein modifying agent.

A zinc Insulin suspension, it offers new hope of single-daily-injection therapy to patients who have found control difficult to achieve with the preparations already on the market.

Discovered by K. Hallas-Moller, Ph.D., and his associates in the Novo Laboratories in Copenhagen, Denmark, Lente Insulin represents a new concept in the chemistry of long-acting Insulin because of its method of preparation.

Theoretically the elimination of the protein in the modifying agent tends to minimize local reactions in patients.

The clinical tests have shown that Lente Iletin (Insulin, Lilly) most nearly resembles in its action NPH Iletin (Insulin, Lilly), which controls the average case of diabetes mellitus on a one-injection-a-day basis. Lente Insulin's duration of action is only slightly longer, the investigators have found.

ALIEN PHYSICIANS FILL HOSPITAL VACANCIES

A large increase in alien physicians taking postgraduate work in the U. S. has helped fill gaps left by many young doctors now on active military duty, a survey showed today.

The number of aliens on U. S. hospital staffs more than doubled from 1950-51 to 1953-54, the survey showed in the Sept. 4 Journal of the American Medical Association.

During the 1953-54 school year, 5,589 foreign physicians held appointments as interns, residents, or fellows on house staffs of the 800 civilian hospitals approved for such training by the Department of State. Three years before the total was 2,072.

These aliens cut the number of vacancies in those hospitals down to 20 per cent for residents and 30 per cent for interns. Without them the percentage would have been "considerably greater," since "many young physicians who would normally be taking postgraduate work are on active military duty." Aliens made up 22 per cent of the total house staffs in the approved hospitals. Most of them were located in general hospitals which do not serve as major teaching hospitals for medical schools. They made up almost half the staffs of tuberculosis hospitals approved for alien training, and about one-fourth of the staffs of mental hospitals, but only about one-tenth of the teaching hospital staffs.

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BOOK REVIEWS

A Primer of Cardiology; by George E. Burch, M. D., 2d Ed., Philadelphia, Lea and Febiger, 1953, $5.50.

The second edition of this excellent textbook presents to student and practitioner a sound approach to the study of cardiology. A diagramatic representation of the main structure of the heart and great vessels serves as a foundation for the clinical aspects of cardiac anatomy as well as the diagnosis of heart disease. This leads to a discussion of the pathologic physiology of the pathognomonic signs of organic heart disease, edema, and congestive heart failure.

The clinical cardiac evaluation reviews the important physical diagnostic signs and undertakes an explanation of the physical characteristics of sound. Frequent use is made of drawings to visualize the physiologic phases of the cardiac cycle and the relationship to other sounds and murmurs. Repetition of the diagram showing volume and pressure changes in the heart seems unnecessary, except where abnormal sounds or unusual murmurs are explained.

Common types of heart disease are briefly reviewed and sound advice is given on the management of the cardiac neuroses. Perhaps the best presentation is that of the congenital cardiac defects. The normal pressures and contents of oxygen of the blood of children and adults, followed by the abnormals, serve as a much needed ready reference to the busy practitioner. Bedside diagnosis of cardiac irregularities explains methods of differentiating the arrhythmias without use of special aids and includes treatment where needed.

The appendix of this book offers useful diets, nomograms, and a brief outline of the nomenclature and classification of heart disease as advanced by the American Heart Association.

In summary, this text of cardiology fills a definite need and merits little adverse criticism. It is sincerely hoped that it will continue to be revised and expanded as the need arises. A chapter on cardiac surgery might be indicated in the face of notable progress in this field.

ALLEN M. GOLDMAN, M. D.

Textbook of Refraction; by Edwin Forbes Tait, M. D., Philadelphia, Pa., W. B. Saunders Company, 1951, Pp. 418, Price $8.00.

Dr. Tait's textbook of refraction and ocular neuromuscular abnormalities has added special local interest because this fine book is dedicated to a great scientist, Dr. Charles Sheard, Ph. D., who holds the position of Distinguished Visiting Lecturer in the postgraduate school at Tulane.

As the author states, his text presupposes a fair knowledge of the anatomy and physiology of the eyes and nervous system, as well as acquaintance with the principles of geometric and physiologic optics.

Dr. Tait has done a great deal of work on the accommodation-convergence relationships and on his system of dynamic retinoscopy. It is not surprising, therefore, that over 150 pages are devoted to the investigation, diagnosis and correction of vergence, fusion, and muscular anomalies. This emphasis is justified, because too many doctors ignore or pay cursory attention to these important problems when they refract their patient's eyes. The patient should not only be able to see with a pair of glasses, but he should also see comfortably.

There is a fine list of references after each chapter to encourage further study.

The reviewer does not subscribe to all of Dr. Tait's ideas, particularly as to dynamic versus cycloplegic refraction, the use of prisms base down instead of up; or to his statement:

"In no case should the basic ametropic correction be modified in accordance with the widely prevalent but inaccurate dictum that hyperopic corrections should be decreased in exophoria and increased in esophoria."

M. C. WILENSKY, M. D.

Refraction and Motility; by Walter B. Lancaster, M. D., Springfield, Illinois, Charles C Thomas, 1952, Pp. 310, illus. 106. Price $7.75.

The stated purpose of this book is to improve the work of the average ophthalmologist in the major subjects of refraction and motility. Unfortunately this reviewer is unable to see that the purpose is accomplished.

The material is presented in two sections, one on optics and physiologic optics and the other on errors of refraction and motility.

The section on optics and physiologic optics is presented in a similar manner avoiding the customary mathematical approach. It would serve as an excellent reading assignment for orientation of a student preliminary to a course in optics but for any other purpose is over simplified.

The section on errors of refraction and motility, unfortunately, is presented from an extremely biased viewpoint—the author seems to overlook the important points that an ophthalmologist must be equally proficient in both dynamic and static methods of refraction and must select the method most suited to the individual needs of the patient. In addition, although there are many points of value in the section, it is extremely problematical that the method of partial fogging described will give an appreciable relaxation of the accommodation in the average patient. The author's disregard for more adequate means of noncycloplegic

relaxation of the accommodation tends to emphasize this biased viewpoint. In this reviewer's opinion it is extremely unfortunate that the second section was published since in all other respects the author has shown remarkable soundness of judgment and clearness of thought in spite of his advancing age.

JAMES H. ALLEN, M. D.

Current Therapy; by Dr. Howard F. Conn, (ed.), Philadelphia, Pa., Saunders Company, 1954, Pp. 898, $11.00.

This is the sixth of an annual volume giving the latest accepted methods of treatment. Each treatment is described as specifically carried out by a well known and qualified consultant, bringing in the latest accepted therapy, but not presenting extractions from the literature. The treatment is organized according to systems except for disturbances of physical and chemical agents and a separate chapter for the treatment of infectious diseases. There is more than one treatment presented for many conditions where it is apparent that several viewpoints are indicated.

The additional therapy this year includes the more advanced chemotherapy and antibiotic therapy of pulmonary disease. The treatment of tuberculosis has been brought up to date. The recent developments in antibiotic therapy are included for infectious diseases of the cardiovascular and respiratory systems. The treatment of hypertension has been brought up to the level of Rauwolfia Serpentina and blocking agents.

The format and the presentation, with a well developed index, make this a very useful reference work for the practicing physician and student.

J. E. SCHENTHAL, M. D.

Spatial Vectorcardiography; by George E. Burch, M. D., 1st Ed., Philadelphia, Lea and Febiger, 1953, $5.00.

This book presents the concept of spatial vectorcardiography to those interested in keeping abreast of new and important knowledge in our study of electrical forces originating in the heart. Definitions and methods of recording are carefully explained with excellent drawings to assist the reader. Impressions are stated as the text develops with advantages and disadvantages of various methods listed.

Since the heart is a three dimensional structure, electric events associated with the heartbeat take place in space. Some volumetric reference frame is needed to show the magnitude and direction of the forces. Several types of these reference frames are diagrammed with the authors preferring the equilateral tetrahedron for simplicity and accuracy. Stereovectorcardiography eliminates the necessity for recordings in various planes and may reduce all vectorcardiography and electrocardiography to one record. Further study of the calibration of this method is needed.

Materials and methods of recording spatial vectorcardiograms are described by the authors with photographs of the equipment. The normal spatial vectorcardiograms are shown with measurements of the loops in a group of adult subjects. This is followed by the loops in pregnancy, and in certain disease states of the heart. A good summary outlines the important points to be stressed.

The authors are to be commended for their clear and concise presentation of a difficult subject. It is evident that vectorcardiography supplements conventional electrocardiography and may someday replace it. Those engaged in research and clinical medicine have a definite approach to an understanding of cardiac electrical forces heretofore poorly explained.

ALLAN M. GOLDMAN, M. D.

PUBLICATIONS RECEIVED

Lange Medical Publications, Los Altos, Calif.: Handbook of Medical Treatment, edited by Milton J. Chatton (4th edit.); Review of Medical Microbiology, by Ernest Jawetz, Ph. D., Joseph L. Melnick, Ph. D., and Edward A. Adelberg, Ph. D.

The C. V. Mosby Company, St. Louis: The Skin, a Clinicopathologic Treatise, by Arthur C. Allen, M. D.

Rodale Press, Emmaus, Pa.: This Pace is Not Killing Us, by J. I. Rodale.

W. B. Saunders Company, Phila.: The Surgical Clinics of North America, Philadelphia number.

Charles C Thomas, Publisher, Springfield, Ill.: Nerve Blocks, by John Adriani, M. D.; Stellate Ganglion Block, by Daniel C. Moore, M. D.; The Auxiliary Heart, by William Walter Wasson, M. D.; Modern Diagnosis and Treatment of the Minor Venereal Diseases, by Orlando Canizares, M. D.; The Clinical Significance of Disturbances in the Delivery of Sweat, by Marion B. Sulzberger, M. D., and Franz Herrmann, M. D.; Elements of Pediatric Anesthesia, by C. R. Stephen, B. Sc., edited by John Adriani, M. D.; The Management of Endocrine Disorders of Menstruation and Fertility, by Georgeanna Seegar Jones, M. D.; The Clinical Physiology of the Lungs, by Cecil K. Drinker, M. D.; The Pyramidal Tract: Its Status in Medicine, by Arthur M. Lassek, Ph. D., M. D.; Neuro-Ophthalmology, by Donald J. Lyle, M. D., (2nd edit.); Treatment of Acute Poliomyelitis, edited by William A. Spencer, M. D. (2nd edit.).

The William-Frederick Press, N. Y.: The Role of the Pituitary in Cancer, by Henry K. Wachtel, M. D.

The Woods Schools, Langhorne, Pa.: The Adolescent Exceptional Child; a Realistic Approach to Treatment and Training, proceedings of the 1954 Spring Conference.

Dramamine's® Effect in Vertigo

Dramamine has become accepted in the control of a variety of clinical conditions characterized by vertigo and is recognized as a standard for the management of motion sickness.

Vertigo, according to Swartout, is primarily due* to a disturbance of those organs of the body that are responsible for body balance. When the posture of the head is changed, the gelatinous substance in the semi-circular canals begins to flow. This flow initiates neural impulses which are transmitted to the vestibular nuclei. From this point impulses are sent to different parts of the body to cause the symptom complex of vertigo.

Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic center to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

A possible explanation of Dramamine's action is that it depresses the overstimulated labyrinthine structure of the inner ear. Depression, therefore, takes place at the point at which these impulses, causing vertigo, nausea and similar disturbances, originate. Some investigators have suggested that Dramamine may have an additional sedative effect on the central nervous system.

Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Ménière's syndrome, the nausea and vomiting of pregnancy, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

Any of these conditions in which Dramamine is effective may be classed as "disease or abnormal stimuli"* of the tissues including the end organs (gastrointestinal tract, eyes) and their nerve pathways to the labyrinth.

Dramamine (brand of dimenhydrinate) is supplied in tablets of 50 mg. and liquid (12.5 mg. in each 4 cc.). It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



The site of Dramamine's action is probably in the labyrinthine structure.

*Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

NOT ARTHRITIS BUT ARTHRALGIA...

If the patient complaining of aching joints is a woman between 37 and 54 years of age, it is highly possible that she is suffering from arthralgia rather than arthritis.[1] It has been estimated that arthralgia occurs in about 40 per cent of women with estrogen deficiency, and is exceeded in frequency only by symptoms of emotional or vasomotor origin.[2] In fact, arthralgia may be as indicative of declining ovarian function as the classic menopausal hot flushes.

Arthralgia, however, is just one of a vast number of distressing but ill-defined symptoms that may be precipitated by the loss of estrogen as a "metabolic regulator." Other good examples are insomnia, headache, easy fatigability, and tachypnea.

Because these symptoms sometimes occur years before or even long after cessation of menstruation, they are not always readily associated with estrogen deficiency, and the tendency may be to treat them with medications other than estrogen. Obviously, sedatives and other palliatives cannot be expected to produce a satisfactory response if an estrogen deficiency exists. Only estrogen replacement therapy will correct the basic cause of the disorder.

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1. Greenblatt, R. B., and Kupperman, H. S.: M. Clin. North America *30*:576 (May) 1946. 2. McGavack, T. H., in Goldzieher, M. A., and Goldzieher, J. W.: Endocrine Treatment in General Practice, New York, Springer Publishing Company, Inc., 1953, p. 225.

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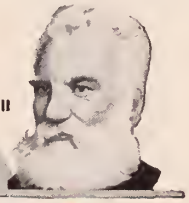
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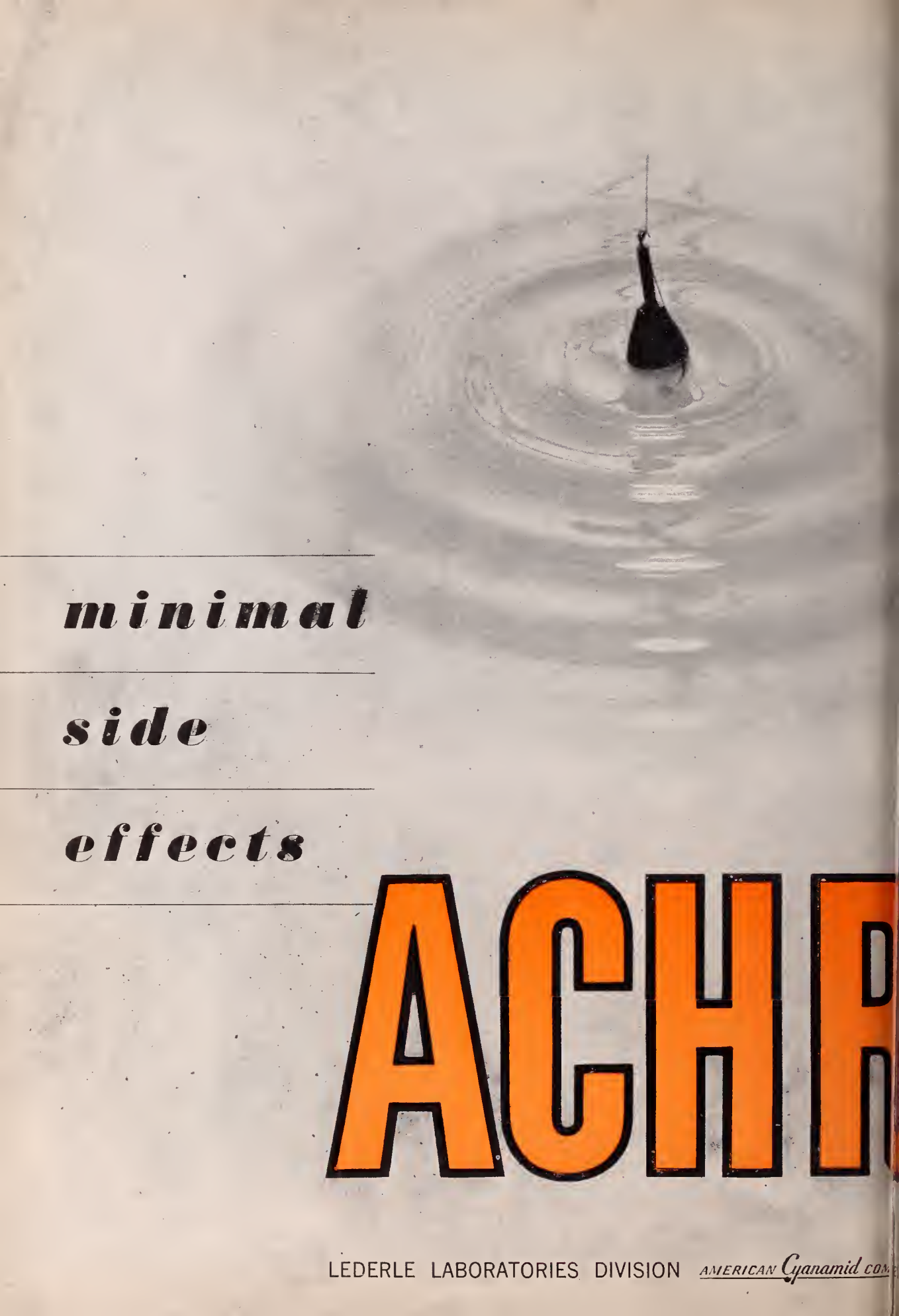
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Although the nutrient needs for optimal health in the aged are not known to differ significantly from those in younger adults,[1] it has been shown that the daily protein requirements in elderly patients vary from person to person. Ascertained values range from below to above allowances recommended for persons in earlier years of adulthood.[2]

According to criteria such as "physical activity, gastrointestinal structure and function, pathologic disturbances, and chemical balances," it is suggested that an optimal diet for the elderly patient should provide at least 20 per cent of its calories in the form of protein.[3]

For several reasons this high intake of protein appears desirable. Decreased activity in the aged tends to induce loss of tissue protein. Preservation of protein enzymes and of endocrinal harmony necessary for supporting anabolic processes requires adequate protein nutrition. Also, the aged person usually is able to handle the end products of protein metabolism satisfactorily.

Generous amounts of tender lean meat can go a long way in supplying the needs of the aged for top quality protein. From 25 to 30 per cent or more of cooked lean meat is protein. Other valuable contributions include the B group of vitamins and essential minerals, especially iron, phosphorus, and potassium. The easy and almost complete digestibility and the palate appeal of meat constitute physiologic values important in the nutrition of the geriatric patient.

---

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2. Ohlson, M. A.; Roberts, P. H.; Joseph, S. A., and Nelson, P. M.: Nutrition and Dietary Habits of Aging Women, Am. J. Pub. Health *40*:1101 (Sept.) 1950.

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Kountz, W. B.; Hofstatter, L., and Ackermann, P. G.: Nitrogen Balance Studies in 4 Elderly Men, J. Gerontol. *6*:20 (Jan.) 1951.

3. Freeman, J. T.: Clinical Correlations in Geriatric Nutrition, J. Clin. Nutrition *1*:446 (Sept.-Oct.) 1953.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.



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Cat treated with streptomycin shows no nystagmus after whirling.



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On dosage of 1 Gm. per day for 120 days, ototoxicity was as follows*:

	Vestibular damage % of patients		
	Mild	*Moderate*	*Total*
Streptomycin	12	6	18
Dihydrostreptomycin	6	0	6
Distrycin	0	0	0

	Cochlear damage % of patients		
	Mild	*Moderate*	*Total*
Streptomycin	0	0	0
Dihydrostreptomycin	12	3	15
Distrycin	0	0	0

**Heck, W.E.; Lynch, W.J., and Graves, H.L.: Acta oto-laryng. 43:416, 1953.*

Distrycin dosage is the same as for streptomycin. In tuberculosis the routine dose is 1 Gm. twice weekly, in conjunction with daily para-aminosalicylic acid or Nydrazid (isoniazid). In the more serious forms of tuberculosis, Distrycin may be given daily, at least until the infection has been brought under control.

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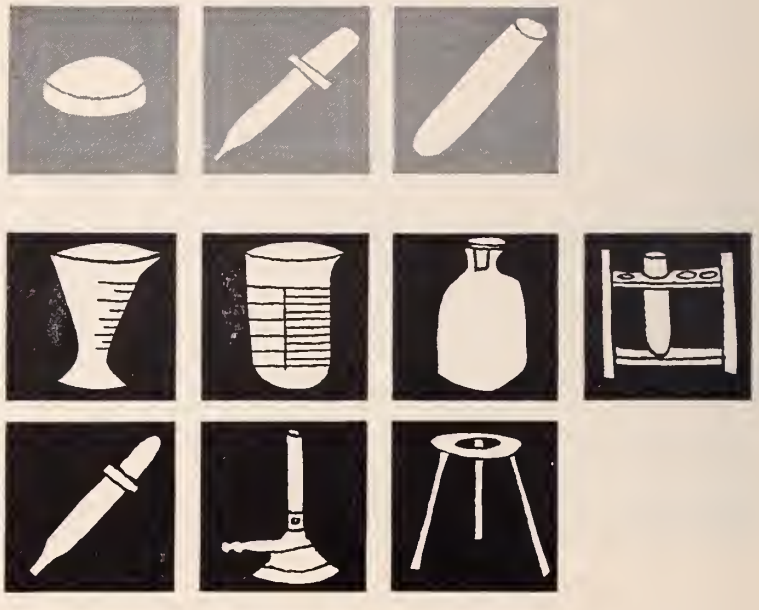
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1. Cook, M. H.; Free, A. H., and Giordano, A. S.: Am. J. M. Technol. *19*:283, 1953.
2. Gray, C. H., and Millar, H. R.: Brit. M. J. *4824*:1361 (June 20) 1953.

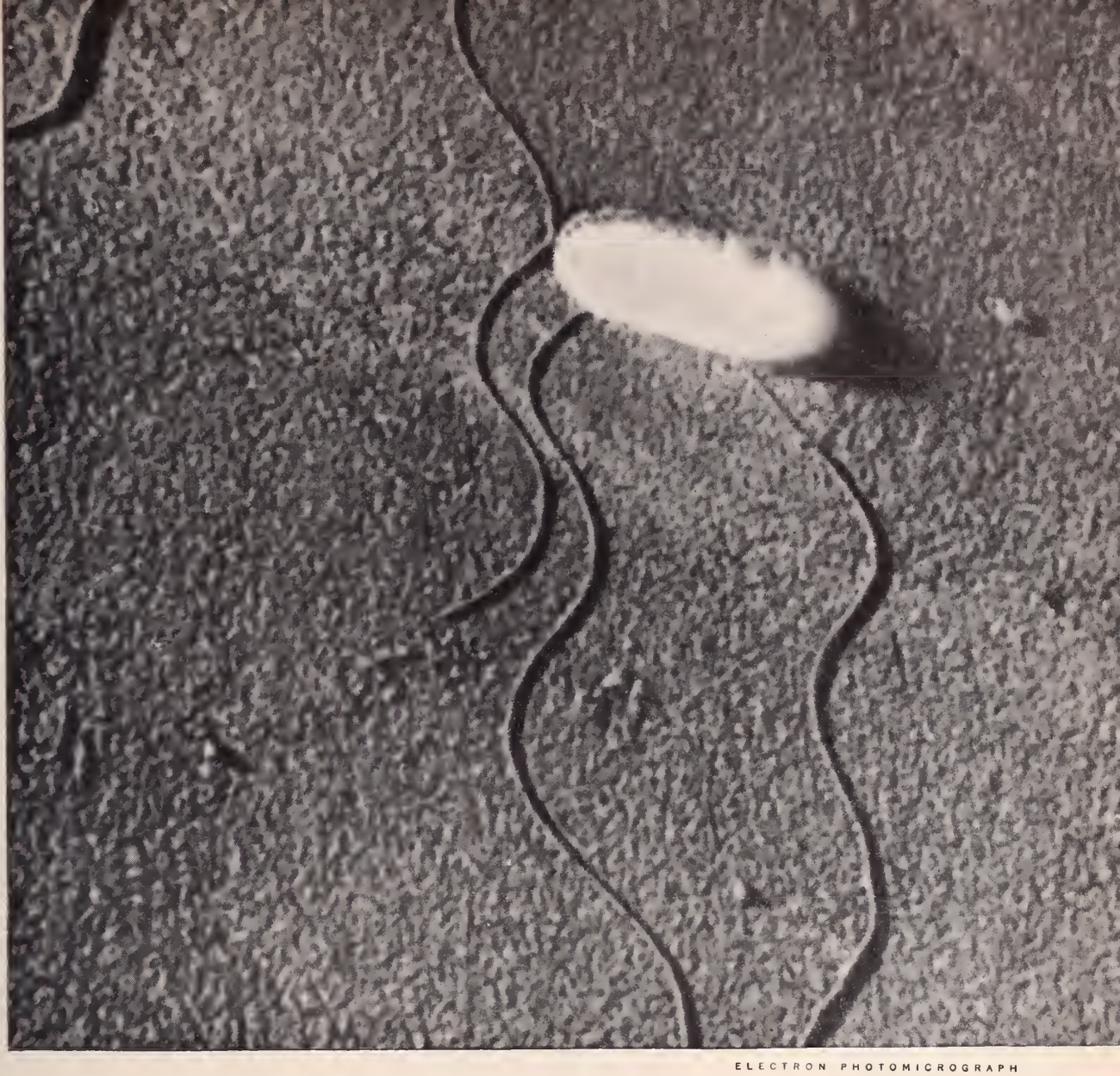
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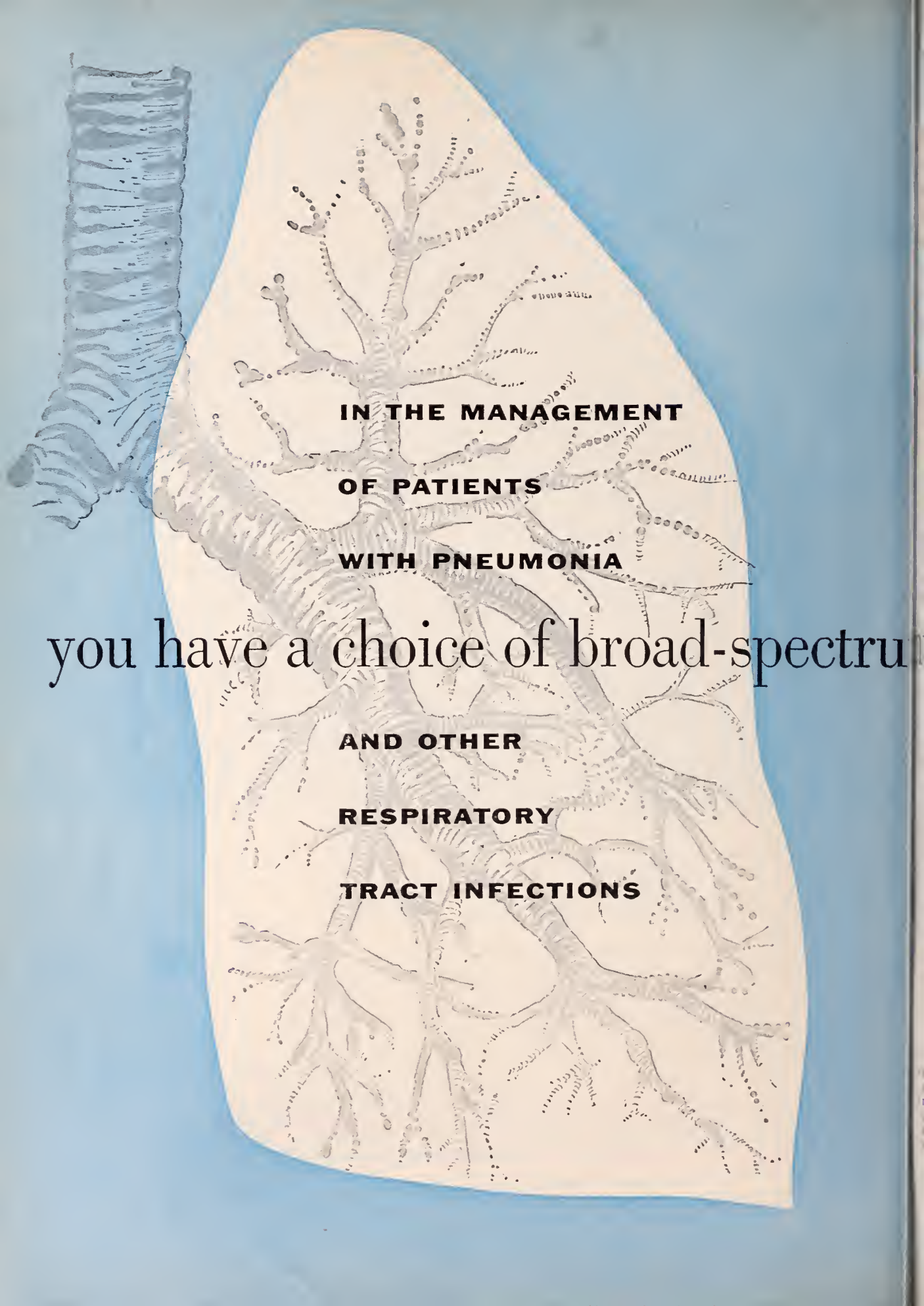
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1. *O'Regan, C., and Schwarzer, S.: J. Pediat. 44:172 (Feb.) 1954.*
2. *Waddington, W. S.; Bergy, G. C.; Nielsen, R. L., and Kirby, W. M. M.: Am. J. M. Sc. 228:164 (Aug.) 1954.*

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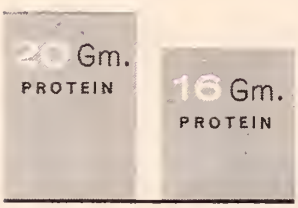
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1. Jeans, P. C., in A.M.A. Handbook of Nutrition, Philadelphia, Blakiston, 1951, pp. 275-298. 2. Stare, F. J., and Davidson, C. S., in The Proteins, American Medical Association, 1945.

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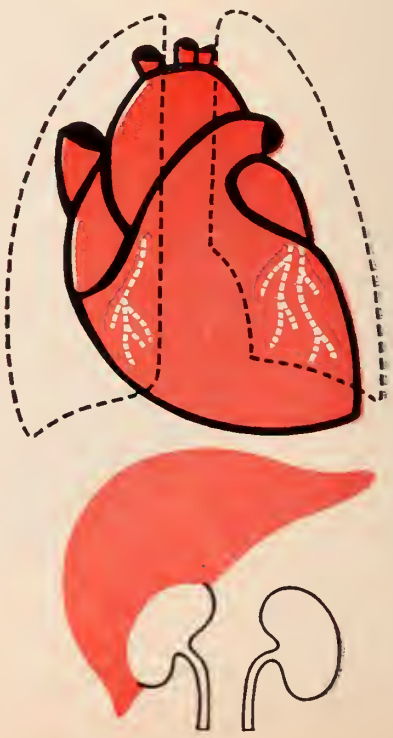
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References
(1) Kirby, W. M. M.; Waddington, W. S., & Doornink, G. M.: Antibiotics Annual, 1953-1954, New York, Medical Encyclopedia, Inc., 1953, p. 285.
(2) Finland, M., & Haight, T. H.: *Arch. Int. Med.* **91**:143, 1953.

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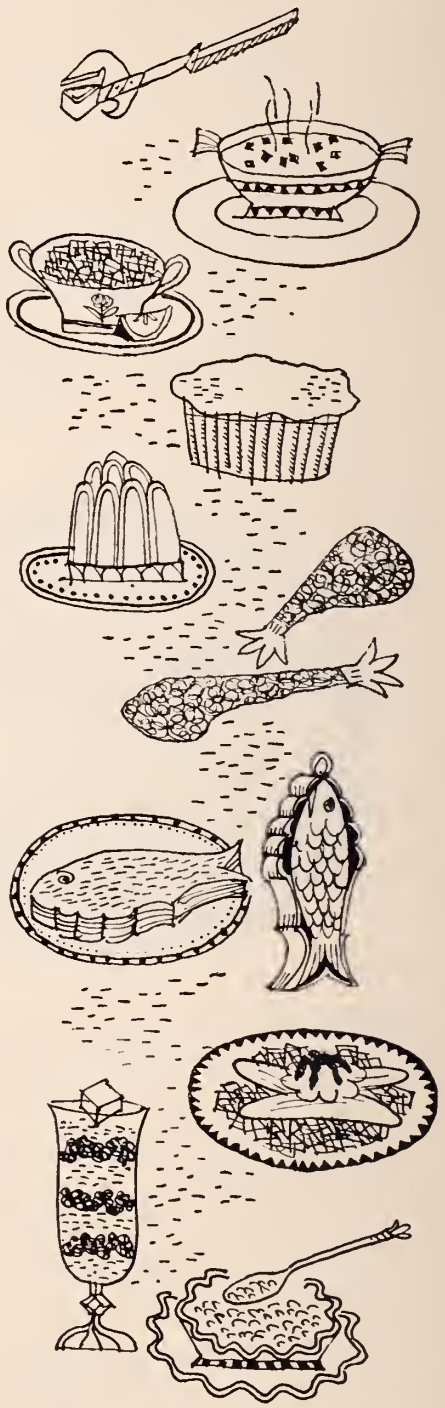


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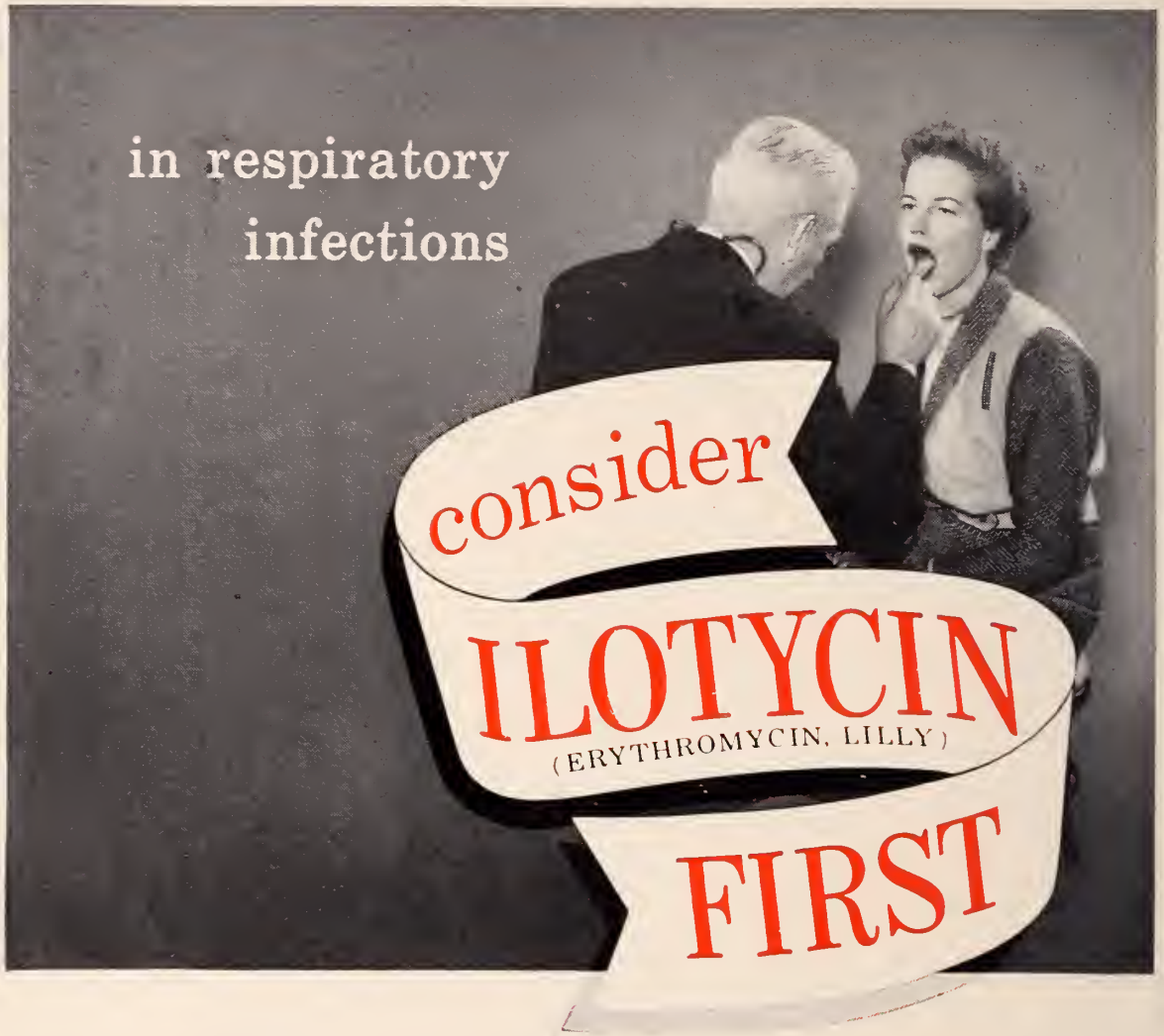
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DIFFERENTIAL DIAGNOSIS OF VERTIGO *

CARL J. GULOTTA, M. D. †

NEW ORLEANS

The symptom of vertigo is one of the most common complaints in medical practice, and often the establishment of a definite diagnosis is fraught with considerable difficulty. As confusing as the clinical picture may be at times, the utilization of a definite organized plan of approach to this problem will facilitate diagnosis which is essential for a rational approach to therapy. Unfortunately, the problem of exact diagnosis is not always easily clarified and, to say the least, is sometimes very complex. At the outset, when presented with such a patient, it must be certain that what one is dealing with is true vertigo. If the patient can state unequivocally, after questioning, that it is the sensation one gets after being on a "merry-go-round," or that it is apparent rotation of the field of vision before the patient's eyes, and not fainting or syncope or ataxia of the limbs, then one can be certain that the problem is one of vertigo. Once the examiner is satisfied of this, consideration to its otologic, neurologic, and general medical aspects should be given. The physician, then, must determine whether he is dealing with a problem localized to the ear with its ramifications, brain stem, cerebellum, or with systemic disease.

In order to properly understand the dynamics of vertigo, it is perhaps judicious first to review briefly the anatomy of those structures which play a role in the control and regulation of the sense of balance. The end organ structures of the inner ear, located in the semicircular canals and the utricle are the anatomical units from which emanate impulses which control one's sense of balance. These structures are shown diagrammatically in Fig. 1. They are tubular membranous structures, containing endolymph, located within the hollowed out temporal bone.

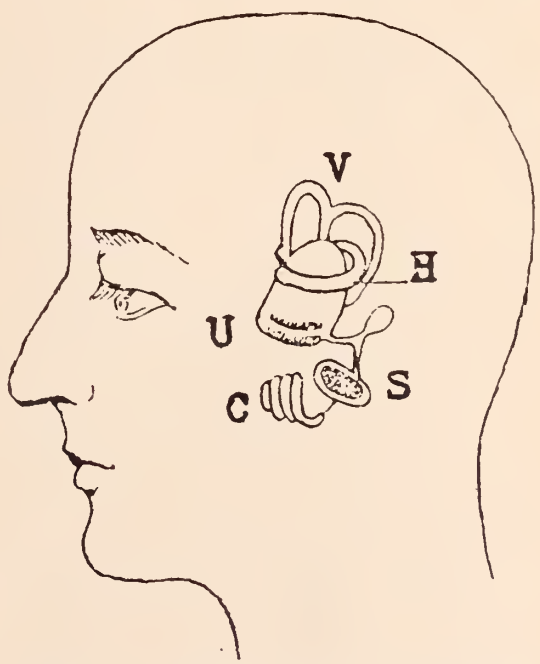


Figure 1. Diagram (not to scale) giving a lateral view of the internal ear within the skull. V, vertical canals; H, horizontal canal; U, utricle; S, saccule; C, cochlea (redrawn from Quix).

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

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fluctuations in severity, but rarely does total deafness result. One or both ears may be affected. Caloric testing in this condition usually reveals a hypoactive reaction. The fundamental basis for this syndrome is unknown; however, enough histological data has been accumulated to indicate that the pathological process is one of hydrops with dilatation of the endolymphatic system of the labyrinth.

II. LESIONS OF THE EAR OUTSIDE THE LABYRINTH

(a) *Block of the eustachian tube.* In this condition there are changes taking place in reference to pressure within the ear system which stimulate the labyrinth, and thus, the statokinetic system leading to vertigo. Catheterization of the eustachian tube will quickly disclose this process.

(b) *Acute middle ear infection.* Here, due to accumulation of purulent material, an increase in pressure within the middle ear is produced which is transmitted to the semicircular canals, whereby there is stimulation of the statokinetic system. Examination of the middle ear together with other symptoms and signs will disclose the diagnosis. In addition to the above mentioned lesions of the eustachian tube and middle ear, foreign bodies and excessive cerumen in the external ear have been known to produce abnormal stimulation of the semicircular canals, and thus vertigo. However, this is seldom seen as a cause for vertigo.

III. CEREBELLO-PONTINE ANGLE LESIONS

The acoustic neuroma, which is the most common of these, is one which involves the eighth cranial nerve and adjacent structures. The clinical picture, once it has become fully developed, is characterized by:

1. Vertigo and nystagmus with the quick phase of nystagmus towards the affected side.
2. Conjugate paralysis of eyes with deviation to the affected side. This is due to regional edema and pressure with the effect on pontine ocular centers.
3. Hypesthesia over the distribution of the trigeminal nerve which is due to damage to the pons and medulla.
4. Peripheral seventh nerve paralysis with asymmetry of the face.
5. Eighth nerve deafness and tinnitus.
6. Absent caloric reactions on the affected side.
7. Adiadochokinesis.
8. Papilledema, which, as a rule, is late in its appearance.
9. Ataxia of the cerebellar type.
10. Suboccipital headache which is unilateral as a rule.
11. X-ray films of the skull showing widening and erosion of internal auditory canal.

The eighth nerve and cerebello-pontine angle area may also be affected by other tumors, by suppurative meningitis and localized abscesses which may produce in addition to the picture of sepsis a number of the above mentioned characteristics of an acoustic neuroma.

IV. CEREBELLAR LESIONS

Excepting ataxia, vertigo is the most frequent manifestation of cerebellar disease. Cerebellar vertigo is closely related to, or identical with labyrinthine vertigo, for it is a symptom truly of vestibular disturbance and is due to irritation of the vestibular fibers as they course to the cortex of the cerebellum. The vestibular tract takes a course from the labyrinth end organ to the vestibular nucleus, then to the cerebellum.

In cerebellar lesions, while vertigo may be present, the cardinal disturbance is lack of coordination. This means that the various muscle groups fail to collaborate normally in strength, time and speed. This is well disclosed with observations of walking or standing. They have a tendency to fall to the affected side; or, forward or backward in lesions of the vermis. Patients with cerebellar lesions also often demonstrate hypotonia, which is illustrated by having them exert counterresistance of an extremity. When resistance is suddenly released the extremity jerks quickly away and is not checked until the resistance of the joints and ligaments comes into play. In the normal person this motion is quickly checked by

the normal tone of muscles. These patients also have ataxia which is demonstrated by the well known finger-to-nose, heel-to-shin and pronation-supination tests.

Nystagmus is nearly always present in cerebellar disease. There is usually a quick and slow phase; the quick phase being more marked when the gaze is directed toward the side of the lesion. The slow phase is a manifestation of hypotonia and inability to hold the eyes in the position voluntarily moved. Speech is also affected, since it is dependent upon coordinated contractions of muscle groups. As a result of cerebellar lesions then, the voice may be monotonous, drawling, syllables separated and jerked or perhaps slurred. In expanding lesions of the cerebellum, headache is often present together with vomiting as a result of obstruction of flow of the cerebrospinal fluid. Intracranial pressure increases rapidly, papilledema occurs early, and diplopia may occur as a consequence of injury to the sixth nerve.

V. POSTERIOR INFERIOR CEREBELLAR ARTERY SYNDROME (LATERAL BULBAR SYNDROME)

This syndrome is not uncommon, yet it is often misdiagnosed. It is due to a thrombosis of the posterior inferior cerebellar branch of the vertebral artery. As a consequence of its occlusion, a wedge shaped section of the lateral part of the bulbous medulla becomes deprived of its blood supply. With degeneration of this area, a clear-cut clinical syndrome appears characterized by involvement of the sympathetic, trigeminal, glossopharyngeal-vagus nerves, cerebellar pathways, and occasionally the abducent, facial and acoustic nerves homolaterally. The spinothalamic tract is involved contralaterally due to the decussation in the cord inferiorly. The clinical manifestations are (1) pain or dysesthesia on the contralateral side of the trunk and limbs; (2)nystagmus; (3) Horner's syndrome on the affected side; (4) paralysis of palatal arch on the affected side; (5) hoarseness from homolateral paralysis of the vocal cords; (6) ataxia and hypotonia of the homolateral side; (7) vertigo; and (8) difficulty in swallowing.

This syndrome, if thought of and duly considered, is so characteristic that it should pose no problem in diagnosis.

VI. MISCELLANEOUS

There are a certain number of other conditions, too, that should be considered in the differential diagnosis of vertigo. They seldom cause true vertigo but because of the disturbance they produce, which may be confused with vertigo, they deserve mention. In tabes dorsalis and peripheral neuritis, with the loss of proprioceptor nerve fibers, the sense of balance is lost in a fashion, but there is no apparent rotation of objects in space. This loss of balance emanates from the ataxia of the limbs rather than the conscious feeling of vertigo. Postural hypotension, aortic stenosis and Stokes Adams syndrome produce syncope rather than vertigo and should not be confusing if the patient is adequately examined and a good history taken. Thorough history taking and complete examination will eliminate such other conditions as petit mal, glaucoma and multiple sclerosis.

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GALACTOSEMIA IN AN EIGHT DAY OLD INFANT

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A review of the literature on congenital galactosemia reveals that to date only 30 some odd cases have been reported. This condition was first reported by Von Reuss in 1908, although the first clear account

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was given by Groppet in 1917. The majority of these 30 odd cases were not reported until after 1945. The first case to be recorded in American literature was by Mason and Turner in 1935.

Galactosemia is the most amenable to therapy of all diseases of the inborn errors of the metabolism group. Early recognition of this disease and the institution of proper therapy may prevent blindness, mental retardation, and even death.

As reported, (by Edmonds et al [1]), the cardinal symptoms and findings in the congenital galactosemia syndrome are as follows: galactosemia, galactosuria, albuminuria, malnutrition, hepatomegaly, jaundice, mental retardation; and cataracts may occur in various combinations in a given case. A familial tendency has been shown to exist in a recent report by Cox and Pugh [2] of Great Britain which tells of three families with multiple siblings having the disease. Although the number of cases reported to date is admittedly small, this may not be as rare a disorder as was once thought. Many infant deaths signed out as infantile diabetes, hepatomegaly of unknown etiology, jaundice of unknown etiology, and chronic malnutrition may have in reality been the congenital galactosemia syndrome.

The object of this paper is to present another case of congenital galactosemia syndrome, to point up the clinical picture and findings by which the diagnosis can be suspected, and to describe some simple tests to establish this diagnosis. The usual method for identification of galactose as the reducing sugar in the urine is by paper chromatographic method, but since this is not available to most small hospitals a plan for differentiating reducing substances in the urine, with the use of only Benedict's solution, a water bath, and yeast is submitted. A simple method for following the efficiency of the dietary treatment is also pointed out.

CASE REPORT

S. K., eight days old, admitted to the United States Naval Hospital, San Diego, California, on September 14, 1954. Discharge date: September 28, 1954. Admission weight: 7 pounds, 15 ounces.

Birth History: Normal spontaneous delivery after eight hours' labor. Mother's blood type AB, Rh positive. Father's blood type A, Rh positive. No cyanosis or convulsions noted in early neonatal period.

Prenatal History: Mother had no viral diseases during her gestation period.

Early Feeding History: Infant was fed on a formula of evaporated milk, one ounce, boiled water two ounces, white Karo one teaspoon. The infant nursed well but was observed to vomit at about every third feeding.

Birth Date: September 6, 1954. *Birth Weight:* 9 pounds, 6 ounces.

Present Illness: The baby had been vomiting since birth and for the past forty-eight hours prior to admission had begun to show progressive lethargy. The parents noted that a yellow color to the skin and eyes had developed on the fifth day of life. No other history was pertinent.

Family History: This was the fifth pregnancy. The first born child was delivered in Spokane, Washington on May 30, 1948. Birth weight was 7 pounds, 12 ounces. At five days of age the child developed vomiting, loose stools, and became progressively jaundiced. At eight days of age the child was taken to the family doctor who made a diagnosis of "enlarged liver". A medication was prescribed to be given every three hours. After having showed no improvement at eleven days of age, the infant was taken to the United States Naval Hospital at Oakland, California. His admission diagnosis there was dehydration and acidosis. When routine urine analysis showed sugar to be present, this diagnosis was changed to infantile diabetes. Although insulin and many other medications were prescribed, the infant continued a downhill course until he expired at three months of age with the body weight of 6 pounds, 8 ounces.

The second child was a male, from a full term pregnancy on January 9, 1950, who has progressed well to date.

The third child was a male, from a full term pregnancy on January 24, 1951; who progressed well to date.

The fourth pregnancy resulted in a stillborn at five months' gestation.

The paternal grandmother states that twenty-nine years ago she lost two children at ages four weeks and six weeks who became jaundiced soon after birth, vomited, were listless and failed to gain weight. She had three other normal children.

Physical Examination: Temperature—98.6° F. (R). Pulse 120. Respirations 18. Well developed, well hydrated eight day old female infant, whose skin and eyes reveal icterus.

H.E.E.N.T. Negative. Careful examination of eyes revealed no cataracts.

Neck: No masses, supple.

Chest: Bilateral equal excursions, no gross abnormalities noted.

Lungs: Clear to percussion and auscultation.

Heart: Normal sinus arrhythmia. Not enlarged. No murmurs audible.

Abdomen: Flat. Liver down 3 centimeters. Kidneys and spleen not palpated. No masses noted.

Extremities and Genitalia: Normal.

A complete neurological examination was negative.

Laboratory Reports:—The following data were obtained while the infant was on a lactose containing diet.

1. Hemogram: R.B.C. 5,300,000. Hemoglobin 16 grams. W.B.C. 8,800; neutrophiles 48%; lymphocytes 52%.

2. Urine tests: Albumin, 150 mgs. per 100 c.c.; sugar 2 plus positive to Benedict's test; Bile negative; Urobilinogen, 1:20 dilution positive.

3. Van Den Bergh Reaction: Direct 5.9 mgs. percent; indirect 14.5 mgs. per cent. Total serum bilirubin level 20.4 mgs. per cent.

4. Nonfasting blood sugar level: 210 mgs.

5. A blood galactose level was set up and performed as follows: 1 c.c. of the patient's oxalated blood was incubated with 1 c.c. of a 10 per cent suspension of washed yeast for ninety minutes. Two controls were incubated under the same conditions. Blood sugar levels were obtained on the samples both prior to and after incubation with added yeast.

Results: Sugar concentrations on the non-incubated specimens—

Patient's blood: 210 mgs. Control A: 70 mgs. Control B: 130 mgs.

Sugar concentrations on the yeast incubated specimens:

Patient's blood: 81 mgs.

Control A: 5 mgs.

Control B: 10 mgs.

From these results it is apparent that approximately 92 per cent of the dextrose in controls A and B was hydrolysed. Assuming that this is also true for the patient's blood, then the blood galactose level is 71 mgs. or $\frac{210\text{-}81}{0.92} = 139$ mgs. of dextrose. 210-139 equals 71 mgs. of galactose.

6. A large amount of urine was collected while the infant was on a lactose containing formula and the following plan was set up to identify the reducing substance in the urine. This technique is outlined in Ham's *Syllabus of Laboratory Examination in Clinical Diagnosis.*

Course: When the above tests were completed, the infant was placed on Sobee milk.* Within forty-eight hours all urine specimens reacted negative to Benedict's urine sugar test. The infant began to nurse well and the jaundice subsided until on September 28, 1954 the infant was discharged from the hospital weighing 9 pounds, 8 ounces.

* A product of Mead Johnson Company.

ORIGINAL URINE SPECIMEN
Benedict's test (boiling, five minutes)

If **negative**, then no reducing substances.

If **positive**, then repeat Benedict's on sample of original specimen at 55° C. for ten minutes.

If **negative** the possibilities are:
1. Glucose under 4%
2. Maltose
3. Lactose
4. Galactose
5. Non-sugars

On 30 ml. of the original specimen do; **Fermentation test** (which removes glucose and maltose.) When fermentation is completed then repeat on this specimen the Benedict's (Boiling, 5 minutes):

If **negative** the possibilities are:
1. Glucose under 4%
2. Maltose

If **positive** the possibilities are:
1. Lactose
2. Galactose
3. Non-sugars

(Rubner's and phenylhydrazine tests may now be of specific value.)

If **positive** the possibilities are:
1. Pentose
2. Fructose
3. Glucose 4% plus

On 30 ml. of the original specimen do; **Fermentation test** (which removes glucose and maltose.) When fermentation is completed then repeat on this specimen the Benedict's (Boiling, 5 minutes):

If **positive** then pentose is present.

If **negative** the possibilities are:
1. Fructose
2. Glucose 4% plus

To differentiate do Seliwanoff's test on a sample of the original specimen:

Fructose gives a positive reaction, while glucose gives a negative reaction.

By this means the reducing substance in the patient's urine was identified as galactose.

Follow Up: The infant was seen by the author in the clinic on October 12, 1954. He had done well and there was no evidence of any jaundice. The liver was only barely palpable. Careful examination of the eyes failed to reveal any evidence of cataracts.

DISCUSSION

Once one is familiar with this syndrome it should offer little diagnostic difficulty. Any infant who in the early newborn period manifests listlessness, vomiting, failure to gain weight, jaundice, and hepatomegaly should have a urine examination. The presence of albumin and a positive sugar reaction should then provide a high index of suspicion for the congenital galactosemia syndrome.

Pratz found in an extensive review of 25 of the reported cases of this syndrome that 19 had cataracts present.[3] Although the above presented case had no evidence of cataracts, this is described as an important feature of this syndrome. The most commonly observed opacity appears as a central refractile ring resembling the "oil drop" effect. Clusters of cortical vacuoles and various forms of zonular cataracts have been described. In view of the rapid cataractogenic effect of galactosemia, periodic examinations by an ophthalmologist should be a part of the management of these cases.

Treatment of these cases can be summed up in one sentence: The exclusion of lactose containing food from the diet. Sobee, made by the Mead Johnson Company, is excellent for diets of these infants. As new foods are added with progressive age, it should be borne in mind not to add other lactose containing foods such as custards and butter. Oleomargerine is an excellent substitute for butter. As the child grows older, Townsend[4] has stated that some milk containing food may be added with no adverse effects. An excellent rough test for the efficiency of the dietary treatment is to have the mother perform urinary sugar tests with the sugar test tablets.† These tests should be done a minimal of twice weekly and any positive results should be reported to the physician at once.

Without treatment most cases will die. Even with early treatment prognosis should be guarded. In the case reported by Townsend et als[4] in 1951, a child was begun on treatment in the first few days of life, yet this child is now thought to be mentally defective. Mental retardation is a great hazard in these cases.

SUMMARY

A case of galactosemia in an eight day old infant has been presented along with laboratory methods for galactose identification in urine and blood. The possibility of galactosemia should be considered in any infant who fails to gain weight, who may or may not show vomiting and jaundice, who has hepatomegaly, and may or may not show cataracts. A urine analysis should be obtained. The presence of albuminuria and sugar should offer a provisional diagnosis. Early diagnosis and early treatment may prevent mental retardation, blindness, and even death. Treatment is best followed by frequent urinalysis. Prognosis should be guarded.

The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the U. S. Navy Department or the Naval Service at large.

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† A product of the Ames Company.

LIVER DISEASE IN AMBULATORY PATIENTS *

MORRIS SHUSHAN, M. D. †

NEW ORLEANS

"Unfortunately, only the advanced stages of hepatic injury are easily recognizable. . . . Even when liver disease is sus-

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 21, 1954, in New Orleans.

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pected, symptoms frequently are not sufficiently well-defined to indicate a definite diagnosis. We have swung too far from the old tendency to ascribe a variety of ill-defined complaints to 'sluggishness of the liver'. To deny its role in illness unless frank jaundice, ascites, circulatory interference, or disturbance of clotting time unmistakably point to that organ, is to take too narrow a view of the importance of the liver." This quotation from a Lederle Bulletin, May 1950, author unknown, very aptly expresses the theme of my presentation.

In recent years great progress has been made in the recognition of diseases of the liver. Liver function is measured by many sensitive tests from which the physician may choose those best suited to the problem under consideration. Liver biopsy has proved a useful tool in selected cases. The vast amount of current knowledge relating to liver disease has necessitated the publication of monographs in this field, and has created a new medical specialist, the hepatologist. However, current texts and articles do not describe or consider incipient, reversible, and mild liver disorders which we encounter among office patients presenting themselves with gastrointestinal symptoms. The disorders to be described do not at present have an acceptable medical name. Let us consider the means by which these conditions are recognized.

First, liver disease may be recognized by certain combinations of symptom patterns. During the war years, experience with the various types and stages of hepatitis indicated that during an epidemic of viral hepatitis one could suspect and confirm the diagnosis of hepatitis without jaundice.

At the beginning of one outbreak soldiers were observed who had the early symptoms of acute hepatitis; anorexia, nausea, and upper abdominal discomfort. They then went on to develop jaundice of only a few day's duration. A study of the relative frequency of the symptoms observed in liver diseases is presented. (Table 1).

TABLE 1
SYMPTOMS OF LIVER DISEASE

Clinical Conditions Considered

Symptoms of primary parenchymal defects liver (Lichtman)
Pre-icteric symptoms acute hepatitis
Acute hepatitis without jaundice
Chronic viral hepatitis
Sequelae of acute hepatitis
Early symptoms portal cirrhosis

Frequency of Symptoms

Anorexia	6	Myasthenia	1
Fatigability	5	Hepatic coma	1
Diarrhea	4	Giddiness	1
Epigastric discomfort	4	Lassitude	1
Nausea	3	Hepatic tenderness	1
Rt. U.Q. Ache	3	Nervousness	1
Vomiting	3	Malaise	1
Arthralgia	3	Depression	1
Dyspepsia	3	Flatulence	1
Weakness	2	Headache	0
Fatty food dyscrasia	2		
Myalgia	2		

The conditions considered are: pre-icteric symptoms of acute hepatitis, acute hepatitis without jaundice, chronic viral hepatitis, the sequelae of acute hepatitis, the early symptoms of portal cirrhosis, and symptoms described by Lichtman [1] as the result of primary defects in the liver parenchyme. Before one can assess any diagnostic evaluation of symptoms, he should be familiar with the total patient; his somatic and psychosomatic components. Previous knowledge of the behavior and medical background of the patient over a number of years is desirable. The physician in general practice is therefore in a better position to evaluate his patient in this regard. One does become familiar with the usual display of symptoms in his psychoneurotic patients. A positive diagnosis of neurosis should be made rather than diagnosis of this condition by exclusion. Food allergy should be considered and excluded, and of course the possibility of other gastrointestinal conditions must be eliminated.

In connection with the symptomatology of reversible liver conditions, it is of interest to consider the meaning of the term "bilious". Bockus [2] states that the former usage referred to episodes of headache, nausea, and vomiting which physi-

cian and patient attributed to the gall bladder. Many of these were attacks of migraine and were not caused by the gall bladder or stones if these were present. To Burril Crohn [3] the term "biliousness" implied symptoms which in a measure were the result of intestinal auto-intoxication. There have been many other names previously applied to disorders akin to or connoting the same as "biliousness". Levin [4] used the term hepatic toxemia. Older writers used the term hepatism. Hurst [5] called these patients "liverish". Into this cateory were placed the vague liver symptoms of tropical chronic malaria. Lichtman [1] uses the term hepatic insufficiency which might be applicable here. Willcox [1] has coined the term hypohepatism. Portis [5] used the term subclinical hepatitis to apply to the patient who was alcoholic with a fatigue state. These examples serve to focus attention on a group of patients one encounters in practice. None of the aforementioned terms have gained acceptance. We propose use of the term "hepatosis". Let us examine the scope of this clinical concept. Hepatosis may be acute or chronic. There may be no symptoms other than an enlarged liver. Other cases present symptoms which may be associated with parenchymal liver involvement. In about one half the cases some degree of enlargement of the liver may be detected. Nearly all show increased amounts of urobilin or urobilinogen in the urine.

Many of these patients give a history of a high fat diet and are addicted to gravies and fried foods in excess. Others simply overeat. The use of liberal amounts of alcohol and a frequent incidence of allergy are also noted. The point should be made that it is believed that these conditions are reversible, for the most part. Follow-up over a long period of time or the use of liver biopsy would probably indicate that some of them are latent cirrhosis. Consideration of the pathology is purely speculative. The acute episodes might be expected to show increased liver size and weight by virtue of increased amount of fluid or blood in or between the liver cells. It has been shown that the young liver is capable of marked variations in size in a very short period of time depending upon the status of the vascular components of the liver. Other cases might be expected to show a fatty liver which frequently is noted when liver biopsy is done.

ENLARGEMENT OF THE LIVER

The detection of liver enlargement is another means of recognizing liver abnormalities in ambulatory patients. The size and weight of the liver depend upon the amount of fluid and blood it contains. Dramatic excursions in liver size occur in twenty-four hours. Rapid shrinking of the liver has been noted in acute infections treated with antibiotics. We have noted sudden enlargement following a huge meal of food and drink which taxed the functional capacity of this organ. Increase in size of the liver may be produced by increase in the fluid content, fat content, or enlargement of the cells of this organ. Palpation of this organ still remains the best clinical method for detecting enlargement. Osgood and Habbe [6] feel that the palpability is affected by the firmness of the liver substance and that some enlarged organs remain undetected. However, attempts to measure liver size by x-ray have not been successful. No good correlation has been obtained between the size of the liver x-ray shadow and the ability to palpate the liver edge. The many surfaces and borders make it almost impossible to measure the liver volume by x-ray. Radiography might prove clinically useful in studying reversible liver disorders where diminution in size of the organ would be expected following therapy. It is practical to secure a film after marking the edge of the liver as palpated with a lead strip marker. A second film using the same exposure factors could then be made following a suitable period of therapy when the liver has resumed its normal proportions. Certain clinicians have felt that palpation of the liver yields unreliable results. Rives,[7] in 1937, reviewed the findings in 96 patients with carcinoma of the pancreas.

Fifty-one per cent of 41 autopsy cases were said to have a palpable liver. Only 21 per cent were found to be enlarged at autopsy. In this series, 26 cases showed enlargement of the liver which was not noted clinically. Armaz-Cruz,[8] in 1951, found that in 43 autopsied cases of portal cirrhosis with clinically enlarged livers only 20 had a real increase in weight. These findings do not alter the fact that palpation of an enlarged liver is clinically significant. Clinicians continue to use this method. The accuracy of recorded findings in a large general hospital is open to some question. In both series there was no separation of cases which presented a liver edge which was barely palpable. This finding should not be considered abnormal. Another reason to make us question the validity of these observations is the experience which we have noted regarding the size of the liver as observed post-mortem. A liver edge palpable repeatedly during life as greatly enlarged is found at the post-mortem table to be much smaller insofar as the edge is seen to protrude below the costal margin. The weight of such a liver did not correllate with the size as observed during life. The reason for this is that the size of the liver changes after death depending upon the weight of fluid and blood remaining in the organ. Palpation of the liver by Ricketts and Kirsner[9] in 50 cases of latent portal cirrhosis revealed hepatomegaly in 44. The detection of an enlarged liver in this series was the key finding which led to the recognition of this abnormality. The final point which should be made is that palpation of a liver edge two or more fingers breadth below the costal margin in the right midclavicular line can be considered evidence of hepatomegaly because we have repeatedly seen it return to normal size following therapy.

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LIVER FUNCTION TESTS

There are more methods of testing liver function today than there are functions of the liver. We will omit from consideration the battery of useful liver tests which may be employed in the study of hospital cases. Let us consider those which may be employed in the study of ambulatory hepatic patients. The tests are simple enough to be performed in a doctor's office. Those used in this study were the following:

1. *Bromsulfalein Test.* In the past many values have been proposed as the upper limit of normal for this test. There has been no uniformity in the size of the dose given, the time of collection of specimens, and the expected normal variation. At present, acceptance of the 5 mg. per kilo dosage is general. Dye retention is measured after a forty-five minute interval, and retention of greater than 5 per cent is considered abnormal. This test gives positive results where liver damage is diffuse and extensive. It is one of the sensitive screening tests to detect early liver involvement. It is particularly useful in detecting cases of latent cirrhosis. It is of interest to consider the significance of borderline values. With the use of a photo-electric colorimeter to measure dye retention, minor variations and degrees of dye retention may be perceived. In our office patients nearly all show values under 2 per cent retention at the end of forty-five minutes. We watch more carefully the future course of people with suspected liver disease with values near the upper limit of normal. A stress situation, such as surgery, may convert a borderline bromsulfalein retention into one which is definitely abnormal.

UROBILINOGEN IN THE URINE

The significance of urobilinogen in the urine was called to our attention years ago by the late Foster Johns.[10] Later at the bedside we observed the material upon whom Allan Eustis[11] of this city conscientiously ran urinary urobilinogen determinations. He reported, in 1927, 15,000 urine examinations. He found that 6 per cent showed a 3 plus reaction. An additional 23 per cent were 1 and 2 plus. He noted the association of positive tests with indicanuria. His figures are somewhat difficult to compare with other series since the test was performed by boiling the urine specimen. He attached

little significance to a 3 plus reaction or a 1:150 Wallace diamond reaction. Today a positive 1-40 is considered abnormal. The best methods for office tests are the Wallace diamond technic with Ehrlich's aldehyde reagent or the determination on a 2 to 4 p.m. urine specimen following the quantitative procedure as outlined by Watson.[12]

The test for urobilinogen in the urine in recent reports proved its usefulness by detecting early viral hepatitis (Swift 1950),[13] and by its results in portal cirrhosis. Rickets[9] found 30 per cent of asymptomatic portal cirrhosis positive by this method and 70 per cent positive in advanced cases. It has been our procedure to rule out porphyrinuria in all urine specimens positive for urobilinogen.

UROBILIN IN THE URINE

Comparatively little attention has been paid to the presence of urobilin in the urine. The current concept favors Watson[1] who feels that urobilinogen is only formed in the intestinal tract as a reduction product of bilirubin. There are several forms of urobilinogen, namely, mesobilirubinogen and stercobilinogen. The first, mesobilirubinogen, oxidizes to produce urobilin. It has, therefore, been the opinion that urobilin forms in old urines from urobilinogen and that the chemical would not be present in freshly voided specimens. We have found that the addition of Lugol's solution to such urine many times results in the demonstration of abnormal amounts of urobilin when urobilinogen is not present. The test for urobilin is performed by first precipitating any bilirubin present with 10 per cent calcium chloride. To the filtrate is added a few drops of Lugol's solution and a saturated solution of zinc acetate in alcohol. After centrifuging, the tube is examined in the beam of a microscope lamp for green fluoresence. Factors which we have found giving rise to a false positive test are: (1) Recent previous administration of vitamin B. (2) Delay in reading the test. An additional thirty minutes may convert a negative to a positive. (3) The addition of an excess of zinc acetate in suspension. (4) Bilirubin in the urine unless first precipitated by calcium chloride. Another fact is that a strong test gives a pink-orange color when viewed by direct light and a green fluoresence when viewed by indirect light. We have considered any definite green fluoresence to be a positive test. The amount of urobilin in the urine may be estimated by determining the greatest dilution which will still result in a positive reaction. We feel that normal individuals do not show a positive test for urobilin in the urine and that the interpretation of a positive test is like that for urobilinogen. Urobilinuria denotes liver dysfunction.

The other liver function tests considered desirable in the study of ambulatory liver patients include: Thymol turbidity test, cephalin cholesterol flocculation test, bilirubin in urine-diazo spot test of Godfried.

STATISTICAL DATA

The first group of cases reviewed includes 195 cases studied in the office on whom, among other studies, a urine test for urobilin was performed. In about half of these cases liver disorders were suspected. They do not represent a consecutive group of new patients. Follow-ups are available on the majority.

Of this group of 195 cases urobilinuria was present in 95; both urobilin and urobilinogen were found in 113. Of the entire 195 cases, 66 were felt to have definite biliary tract disease; 37 showed questionable liver disease; and 92 had no liver or biliary tract disease. In the 95 patients with urobilin in the urine final diagnoses of definite liver disease were made in 60 cases, while 22 had questionable liver disease, and 13 had no liver disease at all.

Of 66 cases which had definite symptoms of liver disease, 28 had hepatosis, 18 had fatty livers, 10 cholelithiasis, 6 acute hepatitis, 1 chronic hepatitis, 2 heart failure, and 1 had malaria. Thus, these figures point out that we encountered with greatest frequency a type of liver disorder not described in current

texts or monographs.

It might be of interest to review the incidence of allergy in this series. Of 113 cases showing urobilin or urobilinogen in the urine 17 were allergic, 82 cases were negative, and 14 showed evidence of clinical allergy.

In order to correct any impression that a positive test for urobilin in the urine is found in a large proportion of patients studied in the office another series of our cases was reviewed. In this recent group of cases the test was performed routinely on all new office admissions, the majority of whom had gastrointestinal complaints. In 100 cases a positive urobilin was found in 17. The chemical nature of the material in the urine giving a positive test was studied by precipitating bilirubin before testing for urobilin and by performing a spot test on the urine for bilirubin by the Diazo spot test of Godfried.

CASE REPORTS

It may be of interest to record briefly several types of clinical pictures encountered in hepatosis eliminating all irrelevant material. These patients were followed over a long period of time and were completely studied.

Case No. 1. Following a sumptuous meal of superabundant food and drink at a famous French New Orleans restaurant, a young male physician was examined the following morning. Nausea, giddiness, and pain in the right upper quadrant were present. An extremely tender liver edge was felt 3 fingers' breadth below the costal margin. Urine urobilin was strongly positive. The symptoms and enlargement of the liver lasted only twenty-four hours. Follow-up over a period of years showed no recurrence of symptoms.

The initial response to this case was to question what the pathology might be and what the liver biopsy might be expected to show. It is felt that the only pathology here is engorgement of the liver accounting for the sudden marked variations in size. The disturbed physiology is probably related to the delayed gastric emptying time expected after the ingestion of a large fatty meal with alcohol. The liver was probably working overtime to accomplish its mission in digestion.

Case No. 2. E. B., a white male of 52, was observed over a period of years with abdominal pain resulting from food allergy. In 1953, he was seen complaining of frontal headache after eating watermelon. The liver was found to be 2 fingers' breadth enlarged. Urinary urobilin was positive. The bromsulfalein showed 0.08 per cent retention at the end of thirty minutes. The headache promptly cleared and liver size was found to be normal five months later.

This case is classified as acute hepatosis which is part of an acute allergic episode involving the liver.

Case No. 3. G. D., white male of 47, presented symptoms over a long period of time. In September 1946, there was weakness, drowsiness, and bloatedness. The urobilin test was positive. In November, he became costive. Urobilin test was again strongly positive. In April, the following year he developed weakness and dyspepsia after a trip to the country in which he consumed much greasy food. In August of that year, he reported dyspepsia after eating seafood. Urobilinogen in the urine was strongly positive. In November 1947, there was arthralgia with a 3 plus urobilinogen in the urine. February 1948, following overwork he reported weakness and dizziness. Urobilin was present in the urine. In April 1953, he stated that he had felt tired for one month. The liver edge was felt for the first time enlarged 2 fingers' breadth below the costal margin. Allergens were eliminated and a low fat diet ordered. One month later all findings were negative. This patient was allergic to seafood, watermelon, milk, cabbage, greasy foods, and tomato gravies by repeated clinical trial. The usual laboratory tests and gall bladder and gastrointestinal x-rays were negative.

This case is of interest because he presented at one time or another all the symptoms of hepatosis, because a definite food allergy was also present, and because evidence of liver enlargement was detected more than six years after the first appearance of symptoms.

Case No. 4. The following is reported to illustrate an asymptomatic chronic hepatosis. A white male upon routine physical examination was found to have a liver edge 2 fingers' breadth below the costal margin. He was a beer drinker who liked to eat fats, gravies, and fried food. The urine showed urobilin. The blood cholesterol was 319. Total bilirubin was 0.72. No bromsufalein was retained after thirty minutes. Thymol turbidity measured 7 units. All findings were negative after two months on a low fat diet.

Case No. 5. The patient was a white male who presented himself in 1946, stating that he was weak, costive, dizzy, and had a dull headache. A tender liver edge was palpable 3 fingers' breadth below the costal margin. The urine was negative and bromsulfalein normal. The findings cleared with treatment. A year later fatigue and headache recurred. The liver edge was again felt 3

fingers' breadth below the costal margin. During a six year observation period there have been no recurrences. This patient had a typical picture without urinary findings.

Case No. 6. The patient was a 50 year old colored, mildly diabetic, obese male. In 1949, the urine was strongly positive for urobilinogen. There was 3.8 per cent bromsulfalein retained in thirty minutes. In 1952, he was asymptomatic. The B.S.P. was 1.3 per cent in thirty minutes. The urine was strongly positive for urobilin. This year a cholecystogram was done and revealed impaired concentration of dye and a number of small stones. The finding of urobilin and urobilinogen in the urine should make us think also of the possibility of gall bladder disease. Several similar cases have been observed of gall bladder disease existing without indicating its presence by means of biliary colic as a signal.

CONCLUSIONS

1. In daily office practice we see patients with liver disorders not described in the literature.
2. The term hepatosis is proposed to describe these reversible liver disorders.
3. Enlargement of the liver as a diagnostic aid is discussed.
4. The presence of urobilin in the urine is found to be of great significance in the diagnosis of early liver disease.

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DISCUSSION

Dr. Murrel H. Kaplan (New Orleans): As one who has been intensely interested for many years in diseases of the liver, I am deeply grateful to Dr. Shushan for bringing out several enlightening and illuminating facts.

First, specialization has really gone far in creating the "Hepatologist". It won't be long before we will see the rise of the right and left "lobulist" and the "interlobulist".

Secondly, during the World War II, we had the opportunity to confirm Dr. Shushan's statement on palpation of the liver as an unreliable index of hepatic enlargement. There were many who felt that a palpable liver was paramount to a diagnosis of hepatitis. We attempted to show that there was no correlation between the palpable liver and the sign by x-ray study: that there was no correlation between the palpable liver and jaundice; and what was more, individual physicians varied in their interpretation of what they felt in the upper right quadrant. All of this still met with the shake of the heads from the late Dr. Barker of Chicago and his colleagues. It was really not until Dr. Roy Turner of New Orleans entered the picture that a more sane attitude was taken toward the palpation of the liver and its relationship to disease.

Third, it is obvious from the work of Dr. Shushan that bile tract dysfunction is just as common as our older physicians claimed. It is unfortunate that in our time, most of us have lost ourselves in the maze of x-rays and highly specialized examinations and have brushed aside the more simple and much more informative tests such as those for urobilin and urobilinogen.

"Hepatosis", as I understand Dr. Shushan, must mean functional or noninfectious biliary disease. I am reminded of a paper by Dr. Wm. Boyd, Professor of Pathology, Univ. of British Columbia, Vancouver, at a recent meeting of the American College of Physicians. In his paper on collagen diseases, he remarked that there were two schools of thought. The "lumpers", those who felt there was a common pathological basis, and the "splitters" who felt that each had a different process. He was a "lumper" so far as collagen disease was concerned. I am a "lumper" in my thoughts on liver disease.

Time does not permit anything but a mere reference to the great work on "Stress" by Dr. Hans Selye. In his book, hepatitis is listed as a disease of adaptation, whose common etiological basis is stress.

These stressor agents, or alarm stimuli, bring out reaction from the body, which we call resistance. This, of course, varies whether it is bacterial, chemical, or functional, but its effect upon a specific target or organ, pathologically, is similar.

In a recent paper on pancreatitis, it was my good fortune to review the fact that the pancreas and the liver were anlages of the duodenum. The implications of their common embryological

basis was mentally stimulating.

Anatomically these organs have essentially the same nerve and arterial blood supply. (I am aware of the portal vein and its course in the liver). Inasmuch as we are more familiar with the diseases of the duodenum, the most common of which is the ulcer, it was felt that with the above information, we were at the threshold of making certain statements regarding liver diseases.

If duodenal ulcer is accepted as a disease of poor adjustment or adaptation, (as most of us have), should not organs, embryologically from a common stalk, having the same nerve and blood supply, be expected to act and react physiologically to certain stimuli in like manner? If we can answer this satisfactorily, we can probably clear up some of the mystery of "hepatosis".

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AUTONOMIC DYSPHONIA *

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Ever since Garcia first succeeded in visualizing his own vocal cords, laryngeal function has been the subject of most careful and detailed study. Anatomists, physicists, otolaryngologists, voice teachers, and engineers, have contributed much to our present day knowledge of the larynx, and have demonstrated the dual function of this organ; namely, in tone production, and as the watchdog of the tracheobronchial air passageway.

As physicians, our training for the recognition and treatment of speech disorders has been strictly limited to the visual approach. We have become thoroughly familiar with the appearance of the vocal cords by either the direct or indirect view. Our understanding of vocal cord function is based only on what we hear in our patient's voices, and what is related to the appearance of the larynx with the tongue forcibly projected. Is this circumstance conducive to true appreciation of the vocal problem? We hear vocal symptoms every day. Are we able to evaluate them fully with our present understanding of laryngeal function? Inertia and willingness to accept time worn theories have fostered ingenious, albeit poorly supported reasons, for disorders of speech.

Since it has been considered that vocal tone is produced solely by the action of the vocal cords, efforts have been constantly made to solve all vocal problems by relating them to the action and appearance of the vocal cords. So many vocal disabilities have been and are still being attributed completely to organic laryngeal pathology, that it behooves us to reexamine some of our long accepted concepts.

The larynx is neither anatomically nor physiologically independent, but must be considered as an integrated part of the human biological system.

The voice plays a singularly important part in human expression. Not only is it influenced by respiration, which is controlled by the autonomic nervous system, but since the voice is a form of emotional expression, it is vulnerable to any pathologic condition which disturbs the emotional life. The act of vocalization is a function of the total personality in its response to varied situational and environmental influences.

While it is important to distinguish dysphonia of pure organic origin from vocal dysfunction of psychosomatic origin, this attempt is usually most difficult. Any strain, any change in vocal range or intensity which surpasses physiological limits, irritates the vocal cords and produces changes in their basic appearance.

At this point, I should like to make it clear that I do not wish to give the impression that I regard all or even most cases of dysphonia to be on an emotional etiology. It is my purpose to stimulate interest in a most frequently occurring phenomenon, whose recognition is based on suspicion and knowledge.

Emotional disturbances, through their effect on the autonomic nervous system, can produce vocal cord dysfunction. Instances of functional nature, as cited later, will demonstrate where personality rehabilitation and reassurance were effectively applied, and the vocal dysfunction ameli-

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

orated. It will also be noted, that despite the dearth of organic pathology, variations of interpretation as to the cause of the dysphonia were numerous. The most frequent diagnoses were laryngitis, myasthenia laryngis, vocal nodules, thickened vocal cords, contact ulcer, and others of more or less far flung imagination.

It immediately becomes apparent that there is real need to survey the individual as a whole. Such investigations must include a careful history, a complete examination, and an appraisal of the social, emotional, and economic adjustments of the individual. In our role as physicians with ever broadening horizons, we must at least recognize the presence of individual maladjustments and their ability to produce vocal dysfunction. Rational key therapy can be administered only if such a procedure is followed. It is not only useless, but illfounded to treat these dysfunctions by unnecessary and potentially harmful medical and surgical procedures.

We must consider that the autonomic nervous system has a direct effect on the function of the vocal cords, since the vagus nerves through its laryngeal branches innervate the intrinsic laryngeal musculature. It is my concept that myasthenia laryngis, without generalized myasthenia gravis, and the formation of a certain percentage of vocal nodules and contact ulcers, actually represents progressive dynamic phenomena brought about through the abnormal stimulation of the autonomic nervous system, and its direct effect on the function of the vocal cords. The progression of vocal cord difficulty commencing with symptomatic referral from conflict, to reversible and finally irreversible changes, is comparable to similar findings in the gastrointestinal tract ranging from the peristaltic belly-ache to the irritable mucusproducing colon, to the final stages of ulcerative colitis.

The individuals whom I am about to consider demonstrated anxiety in one form or another far overshadowing their physical state. They were tense, restless individuals, appearing ill at ease, perspiring freely, always fatigued, and usually associated with varying degrees and manifestations of gastrointestinal and cardiovascular difficulties. Visualize the tense, anxious individual with the complaint of tight throat, power lacking strained voice, and above all the irregularities of pitch. The vocal cord manifestations in this stage are sparse, and may only reveal some injection of the approximating margins. These manifestations are primarily symptoms of the patient's emotional tensions and the misdirected efforts to project his voice through laryngeal actions. He utilizes the voluntary musculature of his throat and neck muscles in attempts to increase the carrying power of his voice. All to little avail, for the exaggerated pressure produces tense adduction of the vocal cords with friction which is an inhibitory mechanism. Thus the mechanism of vocal nodules and contact ulcer formation becomes more readily understandable.

In Jackson and Jackson "Diseases of the Nose, Throat and Ear", published in 1945, it is stated that, "The exciting cause of myasthenia laryngis is trauma in the form of vocal abuse as a result of overworking the thyro-arytenoid muscles". Contact ulcer of the larynx is chiefly caused by the hammering of one cartilagenous vocal process against the other, traumatizing the thin mucosal covering. "Vocal nodules are due to singing or speaking out of normal vocal register, or attempting to produce volume of greater than normal capacity."

It is my contention that while vocal abuse does produce the above disease processes, one should look for other than physical reasons in many instances as the cause of such laryngeal pathology. The etiology of these lesions is still obscure—for even on thorough examination we can see a nodule or ulcer without actual contact or overriding. Though strained voice and faulty vocal habits are frequently given as the cause, this is not always the case. In my experience, I have seen contact ulcers and nodules appear rather suddenly during a period of "shock reaction", with subsequent complete disappearance follow-

ing the period of readjustment, without the use of surgical intervention. Particularly in the so-called "contact ulcer", could this not be on a vascular basis through the production of ischemia by vasospasm? The theory of autonomic dysfunction with psychological imbalance does not appear far fetched.

The inadequate individual, may, through over control of the autonomic nervous system, produce the pictures of organic laryngeal pathology. Therefore, I feel that before surgery is offered, it behooves us as physicians to determine if we are faced with a basic neurosis or true vocal abuse. Surgery on the anxious neurotic should be withheld as a last measure, and only when insight has been given. In the majority of these cases the vocal disorder is so interrelated with personality difficulties, environmental problems, and emotional conflicts, that the prognosis at best is poor. We must train ourselves to recognize these personality disorders as related to vocal problems, and as such, weigh the relative importance of functional versus organic pathology. In few of these cases can the laryngologist alone administer adequate therapy. In an attempt to develop a better integrated and more mature personality, psychiatric collaboration is highly advisable. In conjunction with reassurance and vocal exercises by the laryngologist, this will provide the basis for a more favorable prognosis.

CASE REPORTS

Case No. 1.—A 42 year old clergyman with progressive vocal difficulty manifested by pitch fluctuations with varying degrees of hoarseness. On occasion, his vocal efforts would be barely audible. Difficulties became more extreme during the reading of the prayers than on delivery of the sermon. Speech efforts were accompanied by progressive expenditure of actual physical energy with increasingly poorer vocal results. He finally developed a carry-over of speech difficulties into conversation.

The patient was seen by an otolaryngologist who made a diagnosis of "laryngitis" and started a regimen of vocal rest, inhalations, and instillations. This had little effect on the vocal quality, for despite prolonged periods of abstinence from vocalization, his weekly attempts thereat became less audible to his congregation.

When first seen by the author, the patient appeared as an extremely tense and very anxious individual. Marked physical effort on his part was required for recounting his symptoms, during which, the patient was continually drying his hands with his handkerchief. The voice showed fluctuating pitch even in ordinary conversation. A physical examination failed to reveal any positive findings, except for moderate injection of the approximating edges of the vocal cords and some thickening. Because of such a dearth of findings, a diagnosis of functional dysphonia was considered at this time.

Since shortly thereafter, the patient was contemplating a trip which would carry him within the vicinity of one of the nation's leading medical centers, I urged him to seek consultation there. Soon after, a confidental letter from one of our leading colleagues sustained my impression of functional aphonia.

Still seeking another opinion, the patient consulted with another laryngologist, who made the diagnosis of "vocal nodules". For a time, however, this obscured the true picture, for here at last a sound organic diagnosis was suggested.

With consideration for his profession, I delayed any recommendations for other than six weeks of vocal rest. Following this period, with no apparent improvement, I told him that I considered his difficulties functional in nature and probably resulting from some emotional conflict. My recommendation for psychiatric aid was accepted by the patient.

Then followed prolonged psychiatric analysis which revealed a neurotic pattern developed during early childhood as the result of an overprotective and domineering mother who instilled in her son a fanaticism that "he had to be better than anybody". When he realized that he was not measuring up to this standard, the compulsion to achieve marked success made him try harder. The tension kindled into feelings of frustration and conflict. His resentment to the pulpit, and his unconscious hostility to his life as a clergyman was best achieved through vocal difficulty. For, if unable to speak, there was justification for capitulation.

At the present time, as a result of the reassessment of values and personality integration through analysis, and periodic reassurance, the patient's voice has resumed strength and clarity with considerably better control over the pitch.

Case No. 2.—A 51 year old white male with progressive dysphonia which began five months before his visit to my office, had maintained a position as foreman of a large construction firm. With vocal difficulty, he became progressively more reluctant to talk with his workers. He took to alcohol in large quantities. Prior recommendations were direct laryngoscopy with "stripping of the vocal cords".

Examination revealed a markedly tense and anxious individual. Aside from slight thickening

of the vocal cords and some injection of the contacting edges, there was no pathology noted. Every portion of the laryngopharynx and the trachea was visible to mirror examination.

The lack of sufficient findings and the extreme anxiety and tension of the patient made evident the diagnosis of a conversion hysteria based on some emotional conflict. It was my opinion that direct laryngoscopy offered nothing in the diagnosis of this case, and that "stripping of the vocal cords" would have given this patient an organic defense against his conflict. It was therefore recommended that he undergo phychiatric help.

Before accepting this advice, he visited an alert laryngologist in Mississippi, who confirmed my findings, and also felt that any surgical intervention (diagnostic or therapeutic) was contraindicated, and that this patient could only be helped by psychiatric counsel.

Case No. 3.—A 35 year old unmarried white female complained of periodic loss of voice over the past five years. During these years, she saw other otolaryngologists with varying diagnoses of laryngitis, vocal fatigue, nodules, and voice strain.

Her complaints commenced shortly after her recently widowed sister and three children had moved in with the patient, who was already supporting her mother and cardiac invalid father.

Examination revealed a very tense, rather obese female, perspiring freely, and with marked carotid pulsation. There was severe dysphonia. The vocal cords were normal in appearance, but moved very little on respiration. However, with cough, there was no doubt as to the full range of their motility.

The patient was given reassurance, placed on vocal rest, and requested to return within one week. On her second visit, there was still some dysphonia, although considerably better. The tension and anxiety were still apparent, although somewhat ameliorated. Since examination again failed to reveal organic vocal pathology, I decided to tactfully acquaint her with my impression, namely, that this was an hysterical manifestation without organic reason.

The case history was more carefully searched, and my convictions were strengthened that there was a true conflict between her frustrated desires and the knowledge of obligations to her family. Her anger at being placed in such a position, and her inability to express resentment at home, brought about the dysphonia as an unconscious compromise by an increase of attention on the part of her family. The dysphonia was both the expression and way of dealing with the conflict.

Clarification of her position and explanation of the mechanics of her dysphonia, with reassurance, brought about a resumption of normal voice. She has been free of dysphonia for longer than one year.

Case No. 4.—A 56 year old white male employed as postmaster of Class II Postoffice. He was troubled with intermittent dysphonia for approximately one year with periods of exacerbation and improvement. He was a very tense and anxious individual with additional complaints localized to his intestinal tract and frequently accompanied by palpitations. His position as postmaster had proved most trying, since business in the postoffice increased considerably, and the help situation became more critical.

Examination revealed a right vocal cord that was slightly injected on its contact surface, and somewhat thickened compared to the left cord. There was no impairment of motility.

The patient was given reassurance that there were no neoplasia and that the dysphonia was produced through tension and anxiety over his health and his job. He was placed on physical and vocal rest for a period of two weeks, following which he was given a series of vocal exercises to perform at home in addition to encouragement to sing.

He showed steady and sustained improvement in his voice.

I trust that I have made clear the interrelationship between conflict and dysphonia. It is my thought that where unnecessary surgery is performed, a permanent fixation may be created. With emotional conflict as the etiology of these vocal problems, surgery in these cases would render the approach to the true cause much more difficult. Promiscuous and useless surgery has the positive tendency to make the actual conflict less accessible to the patient's awareness since the vocal cord dysfunction was a curtain concealing the conflict.

In conclusion, these are cases which we must be prepared to recognize and help. Such individuals cannot immediately be referred to a psychiatrist, but must be helped in the beginning by the physician who is in a position to prepare the patient to face his problem.

DISCUSSION

Dr. Harold L. Kearney (New Orleans): I agree with Dr. Zurik that there is generally an emotional background in the etiology of both vocal nodules and contact pathology of the larynx. The emotionally disturbed patient almost constantly talks or yells through a glottic spasm and this combination is probably the usual cause of vocal nodules or contact ulcers.

In a paper entitled "Psychophonasthenia" (Transactions of the American Laryngological, Rhinological and Otological Society, 1941) by the late, able and beloved pioneer in the study of speech disturbances Dr. James Sonnett Greene,

there are some remarks in discussion by Dr. J. E. McAskill who says: "The production of speech is a complex, finely balanced muscular activity where many groups of muscles must be perfectly harmonized. Involved are the muscles of breathing, of vocalization, and of articulation. All these groups of muscles must be perfectly harmonized, if one is to have that smooth co-ordination of a well-oiled machine that pours out a streamlined speech. Now, let an emotional turmoil enter the picture,—say,—fear of one's speech,—and something happens at the control. The physiological reaction in the nuclear cells is still a mystery but we do know there is an interruption or a change in the character of the impulses to the end organs, impulses running wild, which throw co-ordination out of gear. The muscles go into a riot. There is speechlessness or one throws out a jumble of mutilated words. The trouble is in the control, not in the vocalizing machine."

My compliments to Dr. Zurik for his able presentation of his subject.

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ARTERIOSCLEROTIC HEARTS AT WORK *

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INTRODUCTION

During recent years there has been increasing awareness by both physicians and laymen that patients with arteriosclerotic heart disease are not necessarily doomed to a state of invalidism, dependency, and early demise. We now realize that in most cases the diagnosis of myocardial infarction or angina is compatible with many years of continued existence, and, under proper circumstances, with many years of productive employment.

Cardiac patients have been gainfully employed at the Esso Refinery in Baton Rouge. During the past three years we have used physical capacities matched with the physical demands of the jobs for proper placement of the partially disabled employees. The method will be described in Part I and the results in Part II of this presentation.

PART I
JOB PLACEMENT OF THE PARTIALLY DISABLED

Development of Present Method

Five years ago there were on record 465 employees with all types of physical disability who could not or would not perform all the physical effort required of their assignments because of actual or alleged physical disability. The employee with arteriosclerotic, phychogenic and/or iatrogenic cardiac disability was difficult, if not impossible, to place in a productive assignment.

The philosophy of achieving proper placement of employees with partial disabilities can be stated briefly:

1. The presence or absence of physical disability is not, per se, of particular significance.

2. Whether or not the physical disability possessed by an employee interferes with the performance of his assigned task is of the greatest significance.

3. If an employee possesses sufficient physical capacities to meet all the physical demands placed on him by his job, full performance is possible despite the presence of disability.

4. The physical capacities (abilities to perform physical acts) of employees and the physical demands placed on employees by jobs, may be evaluated and expressed objectively.

A search of the literature revealed that the method of Hanman [1] could be tailored and modified to suit our needs. In October of 1951, an engineer was assigned the task of gathering data on the physical demands of the jobs in the Refinery. The plant physicians set about to determine the physical capacities of the employees who were not performing the full requirements of their jobs.

The Method

The physical demands (Fig. 1 to 5) in terms of hours per day are matched (Fig. 6.) with the physical capacities of the man. Each form has identical headings and the terminology has the same meaning for laymen and physicians. A booklet describing this method of coping with the problem of occupational handicaps was prepared and discussions were held with

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

FIGURE 1

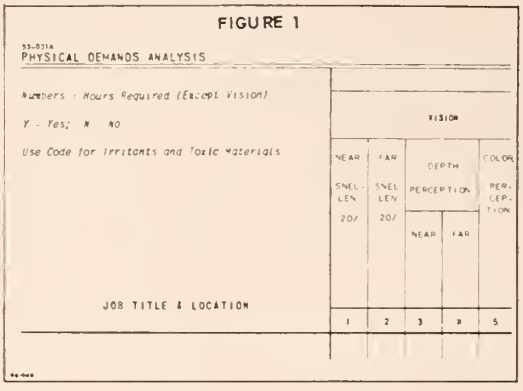


FIGURE 2

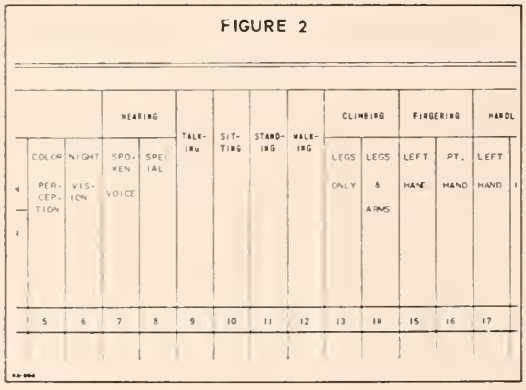


FIGURE 3

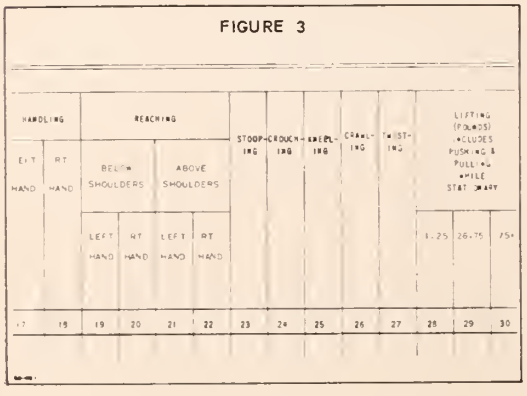


FIGURE 4

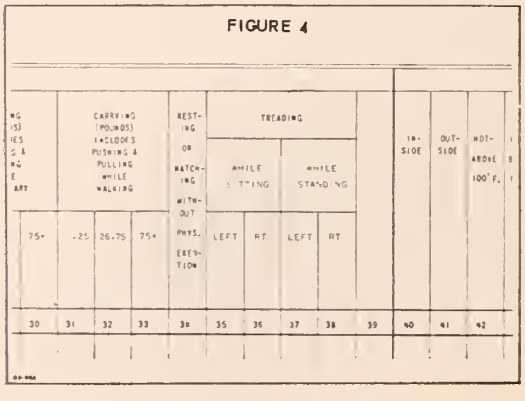


FIGURE 5

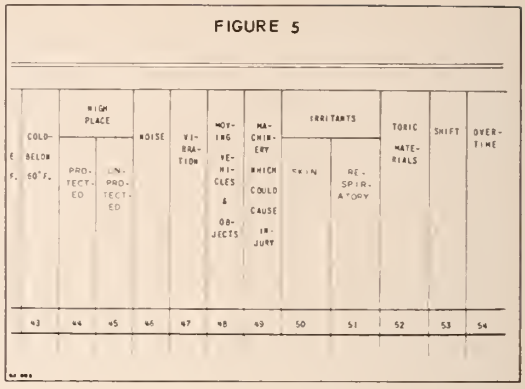
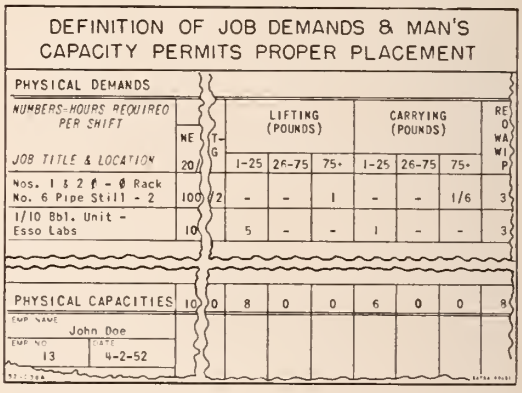


FIGURE 6



all the supervisors and foremen. Proper placement promotes efficiency (Fig. 7). Improper placement is poor business (Fig. 8). New life was given to the handicapped people in our plant because they were at last being assigned to productive work within their capacities.

Discussion

The etiology of an occupational handicap is of no practical value to the foreman, the superintendent, or the employment manager. Frequently, it is a disadvantage because the experience and popular beliefs of the laymen, especially concerning heart disease, are misleading. The negative evaluation of physical capacities, in our experience, has proved equally ineffective because the foreman and others responsible for the employee cannot effectively interpret the capacities by knowing the incapacities. We also believe that the average physician has not been trained in properly evaluating the cardiac patient's residual capacity and he has been overly cautious. He has established unwarranted

FIGURE 7

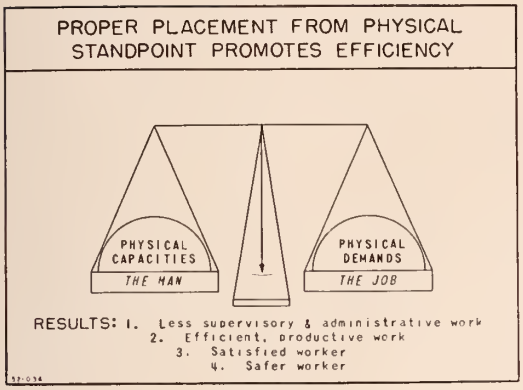
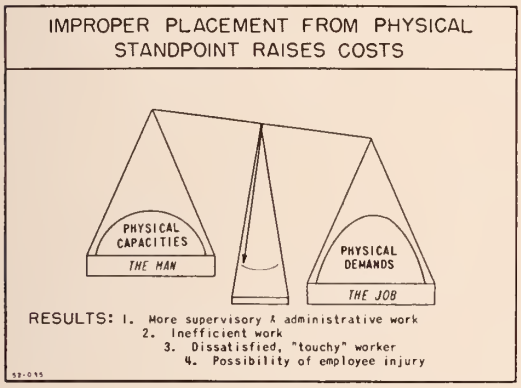


FIGURE 8



fears on the part of employers and his patients.

Matching the physical capacities with the physical demands of the jobs, for the first 265 cases of alleged partial disability for any reason, resulted in only 23 reassignments of work.

The present status of these employees can be summarized as follows:

		Number of Cases	Percent
A.	Died	2	0.8
B.	Totally incapacitated for any assignment	13	4.9
C.	Found to have full physical capacities	89	33.6
D.	Partially disabled but 100% effective in present assignment	99	37.3
E.	Partially disabled—85% to 95% effective in present assignment	16	6.0
F.	Partially disabled—65% to 85% effective in present assignment	27	10.2
G.	Partially disabled—50% to 65% effective	19	7.2
		265	100.0%

The success of our type of "Work Classification Unit" is dependent upon the qualifications of the medical staff to evaluate properly the abilities of the patient and to communicate an understanding of these abilities, with qualifications when indicated, to the management. The evaluating physicians should have training and experience in internal medicine and cardiology and the necessary diagnostic aids to evaluate the total capacities of the patient. The industrial physicians always obtain competent consultations, whenever prudent, to satisfy the patient or his attending physician.

The physical demands of the various types of jobs are not usually objectively evaluated even by a physician in industry. We would like to summarize the maximum, minimum, and average demands for the major exertion factors of the more strenuous laboring types of jobs in our plant:

The maximum amount of walking required of any carpenter in our plant is two and one-half hours per day. The maximum time it would require him to walk up steps or ascend ramps is one hour per day. The maximum time he would be lifting, carrying or pushing and pulling the equivalent of 1 to 25 pounds would be six hours; of 26 to 75 pounds two hours; over 75 pounds, twenty minutes (Fig. 9).

FIGURE 9

PHYSICAL DEMANDS OF CARPENTERS' JOBS

		Hours per Day		
		Max.	Min.	Ave.
Walking		2 1/2	1 1/2	2
Ascending stairs, etc.		1	1/2	3/4
Lifting and Carrying	1 to 25#	6	1	2
	26 - 75#	2	0	1
	Over 75#	1/3	0	1/6

Usually the exertion is spread over several periods in a day but never exceeds these factors of time and exertion in any eight hour period.

Similar physical demands are shown in Figures 10 and 11 for pipefitters and general laborers.

FIGURE 10

PHYSICAL DEMANDS OF PIPE FITTERS' JOBS		Hours per Day		
		Max.	Min.	Ave.
Walking		5	1/2	2
Ascending stairs, etc.		1 1/2	0	1/2
Lifting and Carrying	1 to 25#	6	1	4
	26 - 75#	1	0	1
	Over 75#	3	0	1/6

FIGURE 11

PHYSICAL DEMANDS OF GENERAL LABORERS' JOBS		Hours per Day		
		Max.	Min.	Ave.
Walking		4	1	2
Ascending stairs, etc.		1/2	0	1/5
Lifting and Carrying	1 to 25#	8	0	5
	26 - 75#	3	0	1
	Over 75#	1/2	0	1/10

In figure 12 we have shown the physical demands necessary to perform 90 and 50 per cent of the manual labor jobs in the plant.

FIGURE 12

CAPACITIES IN HOURS/DAY NEEDED TO DO 90% AND 50% OF ALL MANUAL LABOR JOBS (Skilled & unskilled included)	Hours per Day	
	90%	50%
Standing	6	4
Walking	3	1 1/2
Ascending stairs or ramps	1	1/5
Climbing (use of arms & legs)	1	1/5
Lifting up to 75#	2 1/2	1
Carrying up to 75#	1	1/5

PART II

ANALYSIS OF THE RESULTS OF SELECTIVE PLACEMENT OF EMPLOYEES WITH ARTERIOSCLEROTIC HEART DISEASE

This report is based on an analysis of 82 employees at the Baton Rouge Refinery who are listed in our current disability file as having angina pectoris or healed myocardial infarction, and who have been at work a period of six months or more since the onset of symptoms of cardiac disease. The 50 cases of myocardial infarction all have the characteristic electrocardiographic changes (questionable cases having been discarded) and a history which permits determination of time of onset of the condition. The 32 patients with angina have a typical clinical history of exertional chest pain, and in all cases the diagnosis is supported by ECG abnormalities, which may be apparent only following a Master's exercise test. All of the employees have been placed in a job assignment commensurate with their capacities, where they have worked six months or longer. Our experience indicates that if a patient with arteriosclerotic heart disease survives the acute period of infarction or coronary insufficiency and is able to resume work and be actively employed six months, his prognosis for continued ability to work is good.

Age of Onset

Figure 13 shows the distribution of cases according to age at time of onset of arteriosclerotic heart disease. Seven of the infarcts occurred before the age of forty, the youngest being thirty-two; the oldest was sixty-four. The company's retirement age is sixty-five. In most instances the infarctions or the onset of angina occurred in employees during their fifth and sixth decades, as would be anticipated for an industry with a fairly

FIGURE 13

AGE AT ONSET	MYOCARDIAL INFARCTION (50 Cases)	ANGINA PECTORIS (32 Cases)
30 - 39 Years	7	2
40 - 49 Years	15	12
50 - 59 Years	24	16
60 - 64 Years	4	2

stable employee population.

Years Worked with Arteriosclerotic Heart Disease

Figure 14 indicates the number of years

FIGURE 14

YEARS WORKED SINCE ONSET OF ARTERIOSCLEROTIC HEART DISEASE		
	MYOCARDIAL INFARCTION	ANGINA PECTORIS
1/2 - 2 YRS.	20	8
2 - 5 YRS.	17	16
5+ YRS.	13	8

57-082

worked since onset of symptoms for the two conditions, myocardial infarction and angina pectoris. While the average years worked is not long—3.2 for the infarction and 4.0 for the angina patients—it must be remembered the cases were all selected from our current disability file, and the program for selective placement has been in effect only a little over two years. The patients with infarction have worked a total of 163.5 man-years, the patients with angina 112.5 man-years. The combined total for these groups of employees with arteriosclerotic heart disease is 276 man-years of gainful employment.

Types of Work Assignment

Figure 15 shows the distribution of car-

FIGURE 15

WORK CLASSIFICATION		
	MYOCARDIAL INFARCTION	ANGINA PECTORIS
Management	9	0
Technical	7	3
Clerical	4	2
Skilled	19	17
Unskilled	11	10

57-081

diac patients among the major job classifications. Actually, in our refinery we have been able to place them in a great variety of assignments — executives, machinists, welders, pipefitters, clerks, process operators, helpers, etc. In all cases the requisite capacities determine the placement of the partially disabled employee rather than some hazy, preconceived ideas regarding "light" and "heavy" occupations. Twenty-two of the patients with healed infarcts were able to return to their regular job with no significant changes, while 28 were placed in assignments with some limitation as regards the more strenuous activities. And for the angina group, after analysis of their capacities, 17 were able to continue in the regular job without modification, while 15 were transferred to other, more limited assignments.

Effectiveness on the Job

It may be rather surprising to learn that approximately 50 per cent of our employees with coronary heart disease were able to continue in a regular assignment. For the others who were transferred into a different job, it must be emphasized that there was no loss in effectiveness or productivity. The partially disabled employee who is properly placed is fully effective. In reviewing the job situations of the 82 patients, only 1 was once classed by management as "substandard"; this individual was a clerical worker whose physical limitations in no way affected his work output.

Symptoms of Cardiovascular Disease

Twenty-eight of the 50 employees with healed infarcts were essentially asymptomatic on the amount of physical activity they followed on and off the job. Ten of them complained of dyspnea, which was classed as mild in 7 and moderately severe in 3. Of the angina group, 9 experienced exertional dyspnea, which was considered mild in all cases. None of the patients had persistent congestive failure, although one of the infarct group had episodes of right and left sided failure which were readily controlled by treatment.

Seventeen of the patients with infarcts experienced typical angina; this was severe in 2; moderately severe in 5 and mild in 10 cases. In the group with angina

without infarction, the symptoms as described were severe in 4 cases, moderately severe in 24 cases, and mild in 5 cases. (The breakdown of angina into severe, moderately severe, and mild categories is based on a study of the frequency of attacks).

Sickness Absenteeism

Only 2 of the 82 employees were found to have an excessive amount of sickness absenteeism from work due to cardiovascular disease. Thus, our experience follows that reported by the American Heart Association and other sources—that patients with arteriosclerotic cardiovascular disease whose condition is stabilized and who are properly placed tend to have lower sickness absenteeism than average.

Figure 16 indicates the number of

FIGURE 16

MONTHS SPENT ON "SICK REPORT" BEFORE RESUMING WORK
(50 Patients with 51 Myocardial Infarctions)

	NUMBER OF PATIENTS
1 Month	12
2 Months	6
3 Months	12
4 Months	8
5 Months	9
6 Months +	4

57-083

months spent on sick report by patients at the time of myocardial infarction. That 12 were off the job a month or less may seem surprising, but this is explained by the fact that some of the cases had minor, localized infarctions with little or no symptoms, and in a few cases the diagnosis was "retrospective". We feel that ordinarily a patient with uncomplicated myocardial infarction can return to "light duty" in about three or four months. Although the patient may feel well and the infarct may clinically "heal" in less time, there are certain practical and theoretical considerations which usually result in delaying the return more than a month or two. Our experience indicates that patients with prolonged invalidism of several months' duration are often unable to resume effective work, due to a disabling cardiac neurosis or symptoms of angina or failure.

Incidence of Cardiac Neurosis

As regards the occurrence of cardiac neurosis—while we recognize that most patients with serious coronary artery disease tend to manifest anxiety over their cardiovascular status, only 6 of the eighty-two employees here reported are considered to have a significant or partially disabling degree of neurosis.

SUMMARY

A method for the placement of partially disabled employees in job assignments, based on matching of the physical capacities of the employee with the physical demands of the job, is presented.

The work and health status of 82 employees with arteriosclerotic heart disease at the Esso Refinery at Baton Rouge are reviewed.

CONCLUSION

"Cardiacs" who are properly placed are effective workers.

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DIAGNOSIS OF RHEUMATIC FEVER *

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NEW ORLEANS

The diagnosis of rheumatic fever is a difficult subject to discuss without bringing up the obvious. Since the florid case is not hard to recognize, I shall confine my remarks to those borderline situations where doubt may creep in. Most cases of rheumatic fever have joint pains, murmurs, fever, or laboratory signs of infection, alone or in combination, but it is also painfully obvious that not all joint pains, murmurs, fever, or laboratory changes are caused by that disease. The problem is overdiagnosis or underdiagno-

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sis and I shall try to bring out the differentiating points that may be of aid in this situation.

That the problem of rheumatic fever is an important one cannot be denied. At the present time there are at least one million persons in this country who have or have had the disease. Between the ages of five and nineteen years, the incidence varies from 2 to 4 cases per 1000. It is the most common cause of heart disease below the age of forty. The number of adults who turn up with respectable signs of mitral disease in later life without the history of a previously diagnosed or treated rheumatic fever indicate that the incidence may be even higher. It is the major medical crippling disease of childhood and the salvage rate is strongly influenced by early recognition.

As Cassels points out, "Rheumatic fever is a systemic disease which affects several organ systems but does so unevenly and without a constant pattern even in a single system." To construct a pattern in any one case, a large number of variables must be considered. Major manifestations are confined largely to four organ systems: the musculoskeletal, cutaneous, cardiovascular, and central nervous systems.

MUSCULOSKELETAL MANIFESTATIONS

Of most value, and the finding that gives its name to the disease, is the arthralgia. Joint pains are common in children and may be associated with everything from a sore throat to ill fitting shoes. Those due to rheumatic fever are characteristic, for the most part, and can be differentiated from nonrheumatic pains. The latter are seldom seen during the active part of the day but tend to show up just after going to bed. Areas of involvement are usually clearly muscle groups, particularly the calf muscles and tendon areas, most commonly back of the knees. They can be relieved by rubbing, heat, or salicylates and are almost always confined to the lower extremities.

In contrast, the joint pains of rheumatic fever are quite different. They are most conspicuous during the day, beginning in the early morning, although they may also be troublesome at night. They are made worse by activity, heat, or rubbing. Usually they will respond to aspirin, and Cassels makes the categorical statement that arthralgia failing to respond to a blood salicylate level of 30 mg. per cent is not rheumatic in origin. The location is also important. In most cases it is seen in both upper and lower extremities at some point in the disease. Of course, if local heat, tenderness, swelling, or redness is present, the diagnosis is that much easier.

CUTANEOUS MANIFESTATIONS

Skin manifestations can often be of great aid in recognizing this disease. Subcutaneous nodules are considered the most diagnostic, being found only in rheumatic fever and rheumatoid arthritis. Others also can be most suggestive. Nodules, unfortunately, usually appear only during florid, symptomatic rheumatic fever when the confusion is past, but occasionally they may be the only manifestation. Firm, painless, and subcutaneous in location, they are often as easy to see as to palpate. They are most often seen over bony prominences such as the patellae, elbows, scalp, and extensor tendons of hands and feet.

More important than their diagnostic value is their prognostic significance. Gibson interprets their presence to mean usually that the patient has been ill for a considerable time, that he most likely has a severe rheumatic carditis and that his convalescence will be prolonged. Certainly, if they are present the patient's status should be carefully evaluated before he is allowed to be active.

Second only to subcutaneous nodules is the importance of erythema annulare (or erythema marginatum). Many are coming to believe that these lesions have almost the same significance in rheumatic fever as the koplik spot has for measles. Made up of circular or wavy lines of roughly circular pattern, they are often missed unless searched for diligently. Occasionally, the lines are interrupted, giving rise to the lay term, "horseshoe fever". Interest-

ingly, these lesions are not affected by ACTH or cortisone.

Erythema multiforme and erythema nodosum are sometimes seen as complications of streptococcal infection but are not as diagnostic. Erythema nodosum cannot be considered diagnostic of rheumatic fever and when present, cannot be considered to necessarily mean rheumatic activity.

CARDIOVASCULAR MANIFESTATIONS

The gravest sign of rheumatic fever is that of carditis. Here again the situation may not be clear. While the early signs of involvement are alterations in rhythm, rate, and the character of the heart sounds, confusion is most often seen when murmurs are present. Many — perhaps most — children have functional murmurs at one time or another and these are particularly prominent in the presence of fever. Like the nonspecific joint pains, however, these murmurs can be recognized when their characteristics are known. They are usually maximal above the sternum, over the pulmonary area, often in the third and fourth interspaces. They are not blowing in character and have been described as "empty" sounding. Heard best when recumbent, they tend to disappear when erect and during deep inspiration.

The murmurs of rheumatic carditis are characteristic for the most part and are of considerable diagnostic and prognostic value. Earliest appearing is usually a soft, systolic, blowing murmur with apical transmission. It is often variable in intensity. It may signify relative mitral insufficiency from dilatation, actual involvement of the valve or both. Soon after the appearance of this murmur there may develop a diastolic rumble at the apex, sharply localized and in the position of the third heart sound. If the aortic valve is involved, there may be a blowing diastolic murmur beginning with the second heart sound and located in the second and third interspaces to the left of the sternum. Late, of course, the diastolic, presystolic murmur of mitral stenosis appears. Involvement of the pulmonary and tricuspid valves is rare. In addition to the murmurs, tachycardia, dilatation of the heart, and friction rubs are of value.

CENTRAL NERVOUS SYSTEM

Of the major organ system involvements, that of the central nervous system is often the most difficult to recognize early. Any child is apt to be fidgety, many are nervous. Often the process is well advanced before help is sought. Fidgety behavior, too, is quite easy to classify when examined closely. The movements are not continuous and do not repeat themselves. When the child moves purposely the movements disappear. Tics, which are commonly seen in children, are repetitive and stereotyped, always involving the same muscle groups. Facial grimacing, shoulder shrugging, winking, and other such peculiar movements may be seen, repeated in the same manner over and over.

Choreiform movements are distinct from these. They are sudden, aimless and irregular. Muscular weakness may be conspicuous. Writing, drawing, buttoning of the clothes, or anything requiring coordination may be very difficult or impossible to perform. The patient drops things and is frequently scolded for being clumsy. Emotional instability and other psychic manifestations often accompany the disease. Not uncommonly, one side of the body is involved but not the other. The tongue cannot be held quietly when protruded, the forearms are pronated involuntarily when extended above the head and facial expression may change from a broad grimace to a tearful look in a matter of seconds.

Although "pure" chorea probably does exist without rheumatic fever and rheumatic chorea may pursue its whole course without other manifestations, only to show up later, these cases must be considered to have rheumatic fever until proven otherwise and managed accordingly.

OTHER AIDS TO DIAGNOSIS

There are, of course, many other manifestations of less importance in rheumatic fever. In Hansen's series, 10 per

cent had abdominal pain as an isolated finding or during their course. The finding of fever is almost universal but difficult to evaluate. The situation in which an active child has a fever of 99.6° F. in the late afternoon, occasionally reaching 100° F. is a common one. If he happens to have a functional murmur and equivocal laboratory evidences of activity, the diagnosis of rheumatic fever is often suspected. This combination of circumstances is probably the area in which overdiagnosis is most often found. Such temperature curves are not necessarily abnormal and should be viewed with suspicion.

The laboratory does not have much of a specific nature to offer. The sedimentation is at once the most useful and the most misleading of the commonly employed tests. It is a reasonably accurate test for systemic infection or necrosis, nonspecific, and influenced by nonrheumatic tissue changes and serum protein alterations. Rheumatic activity may occasionally go on in the presence of a normal sedimentation rate. Correction with the hematocrit is often misleading in children. Some newer laboratory methods for determining rheumatic activity have been described in the last few years. The C-reactive proteins are probably the most useful of these. They are so-called because of the reactivity of certain abnormal proteins in the serum with the C or somatic polysaccharide of the pneumococcus organism. Their chief advantage lies in their sensitivity and lack of a normal range.

The electrocardiogram may or may not be of aid. Jones and Bland, in the review of the largest series of cases yet reported, found on serial electrocardiograms that only 15 to 20 per cent of children with rheumatic fever showed significant changes during their course.

Lastly, one should have a cautious attitude toward the diagnosis of rheumatic fever. It should never be made unless the situation is reasonably clearcut. It has been said that "in medicine, as in law, the patient should be presumed innocent until proven guilty."

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VULVITIS *

O. P. DALY III, M. D.

LAFAYETTE

Vulvitis is one of the most exasperating problems in the treatment of women, and it is one that is met with very frequently in general practice. This paper will review some of the leading causes of vulvitis in order to refresh them in our minds.

Simple vulvitis is an acute inflammation of the vulva, associated with pruritis. Its causes are many and varied. In children, gonococcal vulvovaginitis, foreign body in the vagina, irritating urine, lack of cleanliness, trauma, and intestinal parasites may be implicated.[1] The treatment varies with the etiology. The treatment of choice in gonococcal vulvovaginitis is penicillin, or one of the newer antibiotics. In refractory cases, estrogenic suppositories may be used. These, of course, should be inserted by the physician.

In adults, vulvitis may be caused by irritating discharges from the vagina, cervix or uterus. Particularly implicated, are trichomonas, monilia, and mixed vaginitis, as well as discharge from fistulous tracts. A search should be made for allergies,[2] and for contact dermatitis caused by soaps, perfumes, deodorants, powders, and clothing, particularly the synthetic fibers such as nylon. Chemical irritation may occur from douches, contraceptive agents, nail polish, drugs, and laxatives, especially

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those containing phenolphthalein. Occasionally, mechanical irritation due to a sanitary napkin can cause a mild vulvitis. Pediculosis pubis and scabies should be investigated. Sometimes in intractable cases of pruritis vulvae, a psychogenic element can be elicited. Rectal lesions such as fissures and fistulas, as well as intestinal parasites, should be searched for.

The treatment consists of finding the underlying cause and eradicating it, or of desensitizing the patient if an allergen is involved.[2] Wet compresses and a few days' rest with sedatives and Sitz baths will help in the acute stages. After this, soothing ointments and lotions may be used.

Follicular vulvitis, furuncles, and *carbuncles* are localized infections usually due to a staphylococcus. Treatment consists of hot compresses and the newer antibiotic ointments or parenteral penicillin. Occasionally, incision and drainage of a carbuncle may be necessary.

Intertrigo is a chafing and maceration of the skin due to moisture and friction of opposing surfaces. It is frequently due to simple uncleanliness. The condition starts in the folds of the skin and extends outward. Cleanliness of the involved parts is essential in treatment. Soothing ointments and dusting powders such as borated talc will give relief. In obese individuals, reduction in weight is necessary.

Tenia cruris is a fungus infection of the skin caused chiefly by the *Epidermophyton inguinale.* Calamine lotion or fungicidal preparations, particularly the lotions or powders, will effect a cure.

Trichomonas vaginitis is caused by the protozoan *Trichomonas vaginalis.* In this disease, the upper vagina and cervix typically show punctate hemorrhagic spots, giving a "strawberry" or "fleabitten" appearance. The discharge is usually frothy white and profuse. The diagnosis is made by vaginal smear with demonstration of the trichomonas. In the treatment, it is often necessary to cleanse the vagina with green soap. It is then dried with a sponge dipped in ether or mercurochrome. This is usually followed by insufflation with one of the trichomonocidal agents.

Many different preparations have been put on the market for the home treatment of trichomonas vaginitis. Some of these are Floraquin (Searle), Devegan (Winthrop), Virform insert (Ciba), Caprylium (Strasenburth) and Inserferm (Blue Line). Any of these medications can be used, and should be used in conjunction with acid douches. It is essential that treatment be continued through the first menstrual period. In spite of adequate treatment, there will be a certain percentage of failures; these should be studied for foci of reinfection in the bladder, urethra, Skene's and Bartholin's glands, and in the husband's prostatic secretions.[3]

In *Monilia vaginitis* the causative agent is *Candida albicans.* This occurs frequently in pregnancy, and is usually implicated in diabetic vulvovaginitis. The symptoms are pruritis, dyspareunia, and a discharge which is usually not profuse as in trichomonas vaginitis. The vagina often contains a cheesy, white, flaky material. The diagnosis is made by vaginal smear for *C. albicans.*

In diabetic vulvovaginitis it is necessary to control the glycosuria and hyperglycemia before the yeast infection can be alleviated. Ant [4] reports good results with the use of vitamin E suppositories in the treatment of diabetic vulvovaginitis. Moniliasis will usually respond well to painting the vagina with gentian violet, or to the home use of Gentia Gel (Westwood), except in the few patients who are sensitive to the drug. Other useful agents are Propion Gel (Wyeth), Coprylium (Strasenburth) and Inserferm (Blue Line). Again, there will be a certain percentage of failures. These should be studied for foci of reinfection such as the fingernails, etc.

Syphilis—The most frequent location of the chancre is in the posterior fourchette and fossa navicularis.[5] They may also occur anywhere in the vulval area and thighs. Chancres may be erosive, ulcerative, or rarely, papular. They are usually painless. The diagnosis must be made by

darkfield examination for spirochetes. Serologic tests are positive several weeks after the onset of the primary lesion. Secondary lesions are seen more frequently in women, and they take the forms of condylomata lata which are moist, flat papules, and mucous patches. Tertiary lesions of the vulva are rarely seen, but when gumma does occur, it must be differentiated from carcinoma and tuberculosis. The treatment of choice in syphilis is penicillin.

Chancroid is caused by the Ducrey bacillus. The lesions are painful ulcerations that are usually multiple rather than single. The multiplicity is often due to autoinoculations with the formation of "kissing ulcers". There is an irritating discharge, and buboes may occur. The diagnosis is made by smears for Ducrey's bacillus. Sulfa drugs, streptomycin, and aureomycin give good results in the treatment of this disease.

Granuloma inguinale is an extremely unpleasant disease in which a large granulating, ulcerative lesion of the vulva is encountered. This may become very widespread. Secondary infection usually occurs with the formation of a very malodorous discharge. Pseudobuboes may be found. The disease is caused by Donovan bodies which are felt by Anderson et als [6] to be an encapsulated, gram negative, bipolar staining bacterium. The treatment is the use of streptomycin, aureomycin, or chloromycetin.

Lymphogranuloma venereum is of virus etiology. The primary lesion is minor and usually heals within a few days; the patient is generally not seen at this time. Buboes then appear; (the time of their onset varies); and are often accompanied by constitutional symptoms such as fever and malaise. The buboes usually break down to form fistulous tracts. Elephantiasis of the vulva (Esthiomene) may occur as a late complication.[7]

The point that is easiest to remember about this disease is the anogenital syndrome. Proctitis is a common late manifestation, and if there is no treatment, stricture formation may occur. The diagnosis is made by the intradermal Frei test. Sulfa drugs, aureomycin and chloromycetin will cause regression of the lesions and symptoms, but it is questioned whether or not the virus is destroyed by these drugs.

Any of the venereal diseases may occur in combination with the others, and it is impossible to differentiate between them and carcinoma on clinical grounds alone. Conrad Collins [8] found that venereal granulomatous lesions seem to be a predisposing factor in development of vulvar malignancy. Hence, all ulcerative lesions of the vulva should be subjected to the following diagnostic survey: Frei test, smears for Donovan bodies and Ducrey bacilli, serologic tests and darkfield examination for lues, and biopsy.

Lipschutz ulcer is an acute, painful ulceration that is found most frequently in virgins and nulliparas. *The Bacillus crassus* is found on smears, but this is apparently identical with the nonpathogenic Doderlein's bacillus.[5] There is no specific treatment.

Tuberculosis of the vulva is the rarest form of genital tuberculosis. It is usually not primary, but is frequently the result of spread from foci elsewhere in the body. The most frequent type of lesion is the ulcerative one. It usually starts as a submucous or subcutaneous nodule which breaks down to form a chronic, firm ulceration. Lupus-like lesions with their characteristic apple-jelly nodules are next most frequently seen. The lesions are chronic and progressive. The diagnosis is made by biopsy, and the demonstration of the bacilli, if possible. Streptomycin is used in treatment.

Atrophic Vulvitis—Atrophy of the vulva is a normal part of the aging process, and is usually asymptomatic. However, if infection is superimposed on the atrophic change, a chronic atrophic vulvitis may result,[9] with pruritis and occasional dysuria from urine passing over an irritated surface. A search should be made for a causative agent, as outlined in the discus-

sion on simple vulvitis. Estrogens may help, but they are of more value in treatment of senile vaginitis. Bland ointments, sedatives, antihistamines, and vitamins such as A and B may be of help.

Lichenification is a thickened or leathery textured skin resulting from long-standing vulvitis with pruritis and scratching.[9]

Kraurosis Vulvae—The term kraurosis means a shriveling or shrinking up. It is an atrophic change as opposed to the hypertrophic changes in leukoplakia. In this condition, the mucocutaneous surfaces of the vestibule, labia minora, urethral orifice, and clitoris are thin and shriveled with much narrowing of the vaginal orifice. It never involves the labia majora, perineum, or perianal regions.[5] The treatment is essentially the same as in chronic atrophic vulvitis.

Leukoplakia—In this condition, there is the development of thickened areas in the form of parchment-like plaques or irregular patches which are grayish to bluish white in color. Fissures and scratch marks are common. The disease may involve the labia majora, minora, prepuce, perineum, and perianal skin. It is frequently combined with kraurosis. The etiology is unknown, although Miller et al,[10] feel that there may be a chronic irritative urinary factor involved. They found that the urinary organic acids are consistently elevated in this disease.

The diagnosis is made by clinical picture and biopsy. Estrogens are not of much benefit in the treatment of this disease. Vitamin A with hydrochloric acid may help some patients, but it is falling into disrepute.[10] The treatment of choice is still vulvectomy, particularly since leukoplakia is a premalignant disease.

In conclusion, the diseases that affect the vulva are numerous. Most of them will respond to a patient search for the underlying cause, and careful therapy. Some of them, particularly those with an obscure etiology, continue to be a real problem in the practice of Gynecology.

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RETROLENTAL FIBROPLASIA; A BRIEF REVIEW *

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Like the fireball of an H-bomb, retrolental fibroplasia (RLF) has mushroomed in the past decade so that it is now probably the most common cause for blindness in this country and England.[1, 2] Like traffic deaths and household poisonings, increase in frequency of this disease is probably due mainly to new environmental factors, the composition of infants — or the "host factors"—remaining unchanged. While it is most commonly encountered in babies born prematurely,[3 a-e] causal relationships in this association are still far from clear.

Occurring out of any proportion that might be expected simply from better survival rates for these very small infants,[4] this predominantly vascular lesion of the retina must be differentiated from true retinal dysplasias, occurring usually in as-

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sociation with many other serious defects, or from simple persistence of certain embryonic remnants of the hyaloid system.[5, 6] With true RLF, the disorder we are concerned with here, there are no important connotations or associations with congenital defects of any sort; babies with this disease are usually otherwise normal.

Time does not permit a detailed review of ocular embryology as it might be related to RLF, though two factors deserve emphasis:[7-9] The formation of capillaries in the retina is a function of venules rather than arterioles, and capillaries are only formed in veins on the *distal* side of arterioles; this results in a zone free of capillaries adjacent to the arterioles. Only at the periphery of the retina do arterioles and venules join to form arches with which a capillary formation is associated. In stillborns or in premature infants dying early in life, peripheral absence of the internal limiting membrane of the retina, together with a relative deficiency in Mueller's fibers, has also been noted. These peculiarities of the immature retina are undoubtedly important "host factors" bearing on the high incidence of RLF in infants born during a still-transitional phase in development of this structure.[10]

The true incidence of RLF is still unknown and there are many reports indicating wide variations of frequency — from area to area, and among hospitals in the same areas.[14] Much of this variation has been attributed to differences in routine care programs, and much to differences in the frequency and competence of ophthalmologic examinations. Recent published reports place a maximal incidence in infants with birth-weights under 3 pounds as high as 83.3 per cent, though most authors describe typical lesions in a smaller proportion—usually from 20 to 50 per cent of their very small babies.[15-17]

Though typical funduscopic features[18] may be noted in the first few days of life, these are most frequently first seen at about the time when the infant would have attained gestational maturity;[19] i.e., if the infant is born about six weeks prematurely, then retinal changes might be expected to appear when the infant is about six weeks old.[14]

It is encouraging to know that there is a striking tendency for spontaneous regression and healing from any of the early stages of RLF,[20, 21] and just recently there have been noted rather remarkable spontaneous improvements in advanced lesions formerly considered to justify a hopeless prognosis for any useful vision. It is now believed that about half to three-fourths of those patients who develop early lesions will show regression.

While many suspected causative or contributory factors have been studied, major interest at present centers about the effects of oxygen given in high concentrations to premature infants early in life.[22-31] The very efficiency of modern incubators for easily (too easily?) maintaining high concentrations of oxygen may well be considered a very important environmental factor influencing the remarkable increases in RLF during the postwar years. Our Premature Unit at Charity Hospital has furnished many observations on this point to a carefully controlled nationwide study, being conducted under the auspices of the Kresge Eye Institute. While the results of this large investigation will not be ready or available to us until next October—when they will be released simultaneously to the American Academy of Pediatrics and to the American Academy of Ophthalmology—it is already apparent at this early date that *survival* of very small premature infants cannot be related to high or low concentrations of oxygen employed in this study.

All clinical investigations as to etiology or therapy of this lesion are difficult to evaluate because of the remarkable tendency to spontaneous remission previously noted. In early reports, a number of proprietary water-miscible dietary supplements were incriminated, only to be cleared by later studies.[32] The role of vitamin E in prophylaxis or therapy has followed a similar pattern[33, 34] so that at

present its relation to RLF appears to be negligible, or at best merely coincidental. Early exposure to or protection from light has been investigated also, but no relationship has been established.[14]

Studies are continuing on the effects of electrolyte contents of various formulae and parenteral fluids; while Hepner and Krause[21] found a clinical correlation between the incidence of RLF and high intakes of electrolytes, and were able to produce ocular lesions in young kittens given *large* excesses of water, electrolytes, and blood, the practical relationship of their observations to the clinical disease in humans is not yet clear. Ingalls found an epidemiologic relationship to fetal anoxia from various causes,[34, 10] and Szewczyk noted that retinal changes appeared shortly after premature infants were removed from high oxygen atmospheres.[22] From this observation he evolved a theory of relative hypoxia as an important causative factor and proposed the term "hypoxic retinopathy" for the early stages of RLF. Campbell proposed a direct toxic effect of oxygen on immature retinal vessels following her study of the disease in a large premature unit before and after oxygen was routinely employed in early care. She related the increasing incidence to high concentrations of oxygen given over long periods of time.[24]

Thus, as to the effects of oxygen, there appear to be several important considerations—relative hypoxia from sudden reduction of oxygen concentration, direct toxic effects of high concentrations, and of course the underlying causes for which oxygen was employed in the first place!

In addition, we have also proposed that variations in the impurities contained in supplies of hospital oxygen at different times and places might explain the variations in the incidence and severity of lesions noted from season to season, area to area, and among hospitals in the same area; studies are in progress here and elsewhere at present to explore this possibility further.

Since Patz and his co-workers,[27, 30] and also Ashton and his group[31] have developed reasonable technics for producing the disease in experimental animals, it may be possible to clarify further these apparently confusing or contradictory observations and conjectures. We have great hopes that observations from such research, properly correlated with the ongoing cooperative national study of this disease in many medical centers, may answer a number of questions which now plague all of us interested in the care of premature infants.

At present, and from a very practical point of view, the following statements seem justified by our present knowledge:

1. In nurseries where the incidence of RLF is low, changes in care program should be made only with great caution and only after careful consideration of possible causal relationships to RLF.

2. The fundi of all premature infants should be repeatedly and carefully examined, during hospitalization and for several months (three to six months) after discharge.

3. For the present, at least, oxygen should be employed sparingly, and only for specific and highly individualized indications.

4. When oxygen must be used for valid reasons, its concentration should be carefully measured and adjusted by trained persons.

5. All efforts should be made to avoid or promptly treat all disturbances in fluid or electrolyte balance, by meticulous attention to isolated technics, proper use of prophylactic agents for controlling infections, careful regulation of intakes related to individualized needs, and by early recognition with prompt therapy of any disturbances which may occur despite such precautions.

6. Like many diseases which might be significantly related to purely environmental considerations, or which will require planning for long-term care, RLF should be reportable.

Addendum

Since this manuscript was prepared, a

review of experiences with this problem at Bellevue Hospital in New York City has been published,[36] with the conclusion: "We believe that RLF is directly related to the excessive administration of oxygen and can be controlled by severely limiting oxygen therapy to premature infants".

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RETROLENTAL FIBROPLASIA *

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Prior to 1942, it was unusual for ophthalmologists to be called in consultation to see newborn babies; now we frequently see babies, especially prematures, for eye examination. This rather startling change

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came about after Terry [1] published a brief report on a new disease of premature infants which he called retrolental fibroplasia (RLF). He noted that it was a disease in which an abnormal membrane formed behind the lens after birth. He also observed that there were no hereditary factors, and that some new factor had arisen to cause the condition. The identity of this new factor has not been proven, but it seems to be near a solution.

Through the past twelve years the reports on RLF have been voluminous. Most of them have been based on clinical observation, some have been reports on autopsy findings, and recently there have been several reports on the disease experimentally produced in animals. Through these many reports the sequence of changes in the RLF picture has been established.

I particularly want to bring to your attention the recently published classification of the disease by Reese, King, and Owens,[2] who served as a committee appointed for that purpose by the National Society for the Prevention of Blindness. This classification greatly simplifies for the ophthalmologist and the pediatrician any discussion of the disease. Since the classification contains a good description of the ophthalmoscopic findings, it is here quoted in full.

The classification groups the disease into its two phases, the active and the cicatricial phases, and each phase is subdivided into five stages:

STAGES OF RETROLENTAL FIBROPLASIA IN THE ACTIVE PHASE

I. Dilatation and tortuosity of retinal vessels
   Hemorrhages may or may not be present
   Early neovascularization especially in the extreme periphery of the visible fundus may be present

II. Stage I. plus neovascularization and some peripheral clouding
   Hemorrhages are usually present
   Vitreous clouding may or may not be present
   Spontaneous regression may occur

III. Stage II. plus retinal detachment in the periphery of the fundus
   Spontaneous regression unlikely

IV. Hemispheric or circumferential retinal detachment
   Elevation of the retina over a large area, but still with some retina in position

V. Complete retinal detachment

GRADES OF RETROLENTAL FIBROPLASIA IN THE CICATRICIAL PHASE

I. Small mass of opaque tissue in periphery of the fundus without visible retinal detachment
   The fundus may have a pale appearance
   The blood vessels may be attenuated

II. Larger mass of opaque tissue in periphery of the fundus with some localized retinal detachment
   The disc is distorted by traction toward the side of the tissue, which is usually temporally
   Cases ending in Grade I. or II. have useful vision

III. Larger mass of opaque tissue in periphery incorporating a retinal fold which extends to the disc
   Visual acuity varies from 5/200 to 20/50

IV. Retrolental tissue covering part of pupillary area
   Small area of attached retina may still be visible or only a red reflex over a sector of the fundus may be seen

V. Retrolental tissue covering entire pupillary area
   No fundus reflex present

There will probably be some objection to this classification inasmuch as Szewczyk [3] has noted the presence of peripheral retinal clouding or edema antedating any visible changes in the retinal vessels. Guy [4] has noted as the earliest sign a vitreous haziness and myopia. However, even though there may be minor differences in the exact sequence of changes, the grouping will be of great

help in description of findings in the disease.

The matter of giving a prognosis in RLF has been difficult. It has always been necessary for the ophthalmologist to be guarded in giving a prognosis, for it has been no easy matter to determine to his own satisfaction which child might have useful vision, very defective vision or no vision. The classification quoted gives us some help in this problem. The changes which can be completely reversible are differentiated from those which will result in a permanent visual defect. However, here again, one must be cautious in giving a prognosis. For example, a child under our observation, now aged 6 years, was first seen at the age of 6 months. At that time there was retrolental tissue covering part of the pupillary area and there was a red reflex over a sector of the fundus. This was the typical Grade IV. of the cicatricial phase. The other eye at 6 months appeared normal. Now we can see in the extreme periphery of the fundus several small atrophic pigmented areas, but no membrane formation in any part of the eye. The pigment distribution throughout the fundus is not much different than that seen in many myopic eyes of minus 6.00 diopters refraction. However, the best corrected vision is only 20/50. This was probably a Grade I. or Grade II. while in the active phase during the first weeks after birth; spontaneous regression occurred but completely normal vision did not develop.

Similar subnormal vision has been found in several children we have seen who are now old enough for accurate visual acuity tests. One cannot forecast with complete accuracy the ultimate vision in even the mildest forms of the disease, and in making a prognosis one must remember that the visual outcome will probably be worse than the fundus picture would indicate.

Surgical treatment in the cicatricial phase with membrane formation was attempted during the early days of retrolental fibroplasia but no procedure was successful. Several forms of medical treatment attempted were also completely unsuccessful. The most recent reports [3, 5, 6] tend to incriminate abnormal oxygen concentrations and may lead to the answer. The solution of the problem lies entirely in prevention, and we hope this disease which appeared so suddenly twelve years ago may soon leave the scene with equal abruptness.

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INVESTIGATION OF TAX EXEMPT FOUNDATIONS

"The power to tax is the power to destroy." This statement was made in a Court decision generations ago. Its full significance is not appreciated by the voting public. A corollary may be phrased to read: "Freedom from taxation may result in progressive increase in power."

The importance of such thoughts as these to the physician is that tax exempt foundations may influence government, and have already had much influence in the field of science in its applications to the broad aspects of medicine. Widespread concern as to tax exempt foundations has developed recently. A Congressional inquiry was authorized. A special committee to investigate tax exempt foundations rendered a report on December 19, 1954. The majority report was signed by three Republicans on the five man committee, Chairman Reece (Tennessee) and Representatives Wolcott (Michigan) and Goodwin (Massachusetts). Goodwin, however, signed with strong reservations and dissent from many of its findings and conclusions. The two Democrats on the committee, Representatives Wayne L. Hays (Ohio) and Mrs. Pfost (Idaho) are alleged to have called the report a "crackpot view by persons ill with fear sickness." The sessions of the committee were not harmonious. On August 20, Congressman B. Carroll Reece, Chairman, made a speech on the floor of the House of Representatives, in which he commented on the sessions and stated, "Throughout the hearings Mr. Hays, (Wayne L. Hays of Ohio), assumed an attitude of aggressive suspicion and insulting distrust of the majority members of the committee and of the committee staff." In this speech it was further stated that there were presently some seven thousand tax exempt foundations with assets in excess of ten billion, and with an annual income in excess of three hundred million. These tremendous resources are taken largely out of our taxable income. He further stated that the committee, "had been subjected to various and strange pressures and harrassments. It began to be reviled from many directions very early in its career," and that it had been attacked by several of the major newspapers.

The committee report which was made four months following this speech made the startling charge that the Nation's biggest tax free foundations were acting as a powerful interlocking "intellectual cartel," which it said is promoting a socialism of far greater menace than communism. The report dealt mainly with large foundations in the social science

fields. It mentioned most often the three big foundations, the Ford Foundation, the Rockefeller Foundation, and the Carnegie organizations and their offshoot groups. The train of thought was that the foundations are growing rapidly for tax reasons. Because of their special tax status they are, in effect, spending public money. They exert through the purse "enormous power" in molding the country's thinking. It was not charged that this came into being as the result of an over-all conscious plan, but that the effect of their collective influence was important. Among suggestions made by the Reece report was that more complete financial reports from the foundations should be made public, and that a time limit of ten to twenty-five years on the foundations should be established.

In opposition to the statements made in the report of the House Committee, spokesmen for various foundations stated that the accusations were false; that the investigation of foundations was biased from start to finish; or that flimsy allegations have been accepted as fact without support of trustworthy evidence. Dean Rusk, President of the Rockefeller Foundation, is reported as concluding:

"In addition to many ill-considered recommendations, the Reece committee's report includes two recommendations which the Rockefeller Foundation has strongly supported, namely, full publicity for foundation activities and an increase in the manpower of the internal revenue service to enable it to watch these activities more closely." At this point, members of the medical profession wonder what its attitude should be. The situation is not unlike that which develops in many medicolegal cases where opposing teams of experts take the same facts and draw diametrically opposite conclusions. We recognize the great service that some of the foundations have rendered to the science of medicine in the years, and occasionally, to the practice of medicine. We also recognize the many limitations on the capacity of government to spend money wisely. The foundation money is community surplus, which we hope is being spent wisely. On the other hand, the charge that some foundations are promoting Fabian socialism is disturbing. Since the day of the first income tax law we have already come that road too fast and too far. The advice of Dean Rusk that the public have access to the knowledge of the activities of these foundations is reassuring. And we are reasonably certain that if their activities were patterned along the lines of the American Medical Education Foundation, which is to prevent the advance of socialism in medical schools, the sources for criticisms would be minimized.

It should be quite clear, therefore, from these various points of controversy that the public, as well as the medical profession, has a proper interest in the activities of tax exempt foundations.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1955 ANNUAL MEETING

COMMITTEES ON ARRANGEMENTS

Below are listed the Advisory Committee and chairmen of special committees incident to arrangements for the 1955 Annual Meeting who have been appointed by the General Chairman, Dr. J. Theo Brierre. These doctors should be contacted for information pertaining to various phases of the meeting.

ADVISORY

Dr. H. B. Alsobrook
Dr. C. J. Brown
Dr. J. E. Brierre
Dr. Edgar Burns
Dr. A. V. Friedrichs
Dr. Val Fuchs
Dr. M. M. Green
Dr. S. Hobson
Dr. T. F. Kirn
Dr. E. H. Lawson
Dr. E. L. Leckert
Dr. L. J. Menville
Dr. H. A. Thomas
Dr. N. J. Tessitore
Dr. E. L. Zander

BADGES
Dr. E. G. Walls
BANQUET
Dr. E. J. Joubert, Jr.
DECORATIONS
Dr. E. S. Fatter
ENTERTAINMENT
Dr. J. G. Menville
FINANCES
Dr. G. H. Hauser
GOLF
Dr. Jack E. Strange
HOSPITALS
Dr. Ernest Celli
HOTELS & MEETING ROOMS
Dr. Branch Aymond
LANTERNS
Dr. J. Morgan Lyons
LUNCHES
Dr. W. J. Landry, Jr.
PUBLICITY
Dr. Rafael Sanchez
REGISTRATION
Dr. R. E. Gillaspie
SCIENTIFIC EXHIBITS
Dr. Edward Matthews
SIGNS
Dr. E. H. Countiss
TECHNICAL EXHIBITS
Dr. G. D. Feldner
TRANSPORTATION
Dr. R. L. Buck
WOMAN'S AUXILIARY
Dr. J. M. Davidson

WHAT THE AMA DOES FOR ITS MEMBERS

C. Grenes Cole, M. D.

We would very much like to see all the doctors of this State, and especially all members of the Louisiana State Medical Society, visit the A.M.A. headquarters at 535 North Dearborn Street, Chicago, housed in a nine-floor building, completely furnished with all the latest equipment so necessary for their 900 employees. These employees carry on, year by year, the many activities and duties required by them in the respective fields to which they are assigned, in achieving the goal to which the National Association is pledged: "the promotion of the Science and Art of Medicine and the betterment of health conditions throughout the nation". Such a visit would open the eyes of some of our more skeptic members who are always talking about how little they get out of the $25.00 annual membership dues to the AMA. You can receive plenty for your dues if you choose and would only take advantage of the many services offered you.

We wish to outline briefly a few of the major services provided you for the $25.00 charged for your annual membership dues.

To begin with, the major portion, $15.00, of your dues goes for a year's subscription to the Journal of the AMA, one of the most recognized and outstanding publications in the world, going to over 160,000 doctors each week. If you prefer a specialty journal you may substitute any one of the following nine specialty journals published by the Association: the American Journal of Diseases of Children, Archives of Neurology and Psychiatry, Archives of Dermatology and Syphilology, Archives of Surgery, Archives of Ophthalmology, Archives of Otolaryngology, Archives of Pathology, Archives of Internal Medicine, and Archives of Industrial Hygiene and Occupational Medicine.

The reading of your weekly Journal of the AMA, one of the best recognized and most extensively read scientific medical publications in the world, will keep you posted as to what medical science is offering in the way of advancement in all fields of endeavor. It will furnish you with the most accurate and trustworthy information obtainable in all fields of scientific research and covers all branches of medicine.

In the past, for years, the physicians had to rely almost entirely on their personal experience in the use of drugs for their patients. Now, you have accessibility to the wonderful service offered you by the AMA's Council on Pharmacy and Chemistry which regularly reports on the therapeutic value of the newer drugs placed on the market, and publishes the result of their examination in the Journal. You, as a member, can also write the Council on Pharmacy and Chemistry, the Council on Foods and Nutrition or the Council on Physical Medicine and Rehabilitation or any of the other Councils for any information desired on certain drugs, foods or other products, or any information you might wish on other subjects so vital to you in the practice of medicine.

AMA does many other things for you, assures you of a good medical education and has been helping you since you first entered medical school. Since 1847, AMA has exerted its very best efforts to improve our medical schools. From 1905 to 1920 it led the fight to eliminate all low rate medical schools and maintain, for those few schools which withstood the acid test of rigid inspection and earned for themselves the designation of Grade-A medical schools, the high standard of education enjoyed at the present time and offered prospective students who are entering our medical schools today. Of course, your Association is continuing to work for better doctors of the future, and is demanding higher standards and better conditions, for our medical schools.

In 1950, the Association organized the American Medical Education Foundation for the purpose of raising funds to help support our medical schools, so desperately in need of money, to continue their high educational standard. Your Association has been a great source of financial aid to these schools, having contributed most generously to this Foundation. Its gift the first year was $500,000 and since then large amounts have been and are being contributed.

AMA secures for our interns and residents, better hospital facilities for their training by repeated inspections of these institutions, and only hospitals having sufficient patients, adequate equipment and competent teaching staffs are approved as teaching institutions for intern and resident training.

AMA maintains a national placement service to aid you in getting properly and happily located after graduation. This service keeps files on communities in need of physicians and physicians in search of locations, and works closely in cooperation with the State Societies in this work. The names of all physicians about to be released from military service are given to the AMA by

the government and through the efforts of AMA and State placement services, these doctors are able to contact communities where they might locate for practice.

Your Association's library, which receives about 2000 leading medical journals of the world, is maintained entirely to be of service to its members. This service is free and permits a member to borrow copies of any of these journals, checking out up to three at one time and keeping them for five days.

A popular service, known as the "Package Library", is carried for the benefit of members. This covers articles from current medical journals, pamphlets and numerous paper-bound publications which are daily being filed and cross-indexed in the AMA library. If you wish such a loan package to review any subject or to prepare a paper, just write the AMA Library, 535 N. Dearborn Street, Chicago, Illinois, and the staff will mail you the information free of charge. As a rule, this service requires two weeks. However, if there is need for quick service, so specify in your request and the material will then be furnished you quickly by airmail, special delivery. In this instance you will be expected to pay the extra postage. You should state clearly and specifically what you want, to permit the staff to select the most helpful articles from the large files.

As a service to the members, a Cumulative Index Medicus is published quarterly, at a loss, listing articles appearing in leading medical periodicals. A separate section is dedicated to books published on medical subjects.

Your AMA makes available to the members, two national scientific programs each year. The Annual Session, which twelve to twenty thousand physicians attend, is held in June. This meeting has been described as "a complete postgraduate education under one roof". The Clinical meeting, with an attendance of three to five thousand M. D's meets each year in early December. This Session features clinical demonstrations, question and answer forums, motion pictures, color television and great numbers of scientific and technical exhibits of profound interest to the profession.

Your Association passes on the merits of medical devices connected with diagnosis and therapy, foods used for special diets, and cosmetics. Members of the appropriate Council study and carefully consider these products and the data relating to them, prior to their acceptance or rejection by the AMA. Reports on the qualities or merits of such products, are published in the Journal under the headings of the Council on Physical Medicine and Rehabilitation, the Council on Foods and Nutrition, and the Committee on Cosmetics. Reports of the Council on Physical Medicine are published in a pamphlet called "Apparatus Accepted", a copy of which will be furnished you free on request. The Council on Foods and the Council on Physical Medicine supervise the publication of the "Handbook on Nutrition" and the "Handbook of Physical Medicine and Rehabilitation".

Any questions regarding drugs or other products related to the practice of medicine will be freely answered by your Association. Thousands of letters from members, containing pertinent questions, are answered annually. Only those medical products which are Council accepted can be advertised in the AMA Journal or the nine AMA specialty journals, or exhibited at AMA meetings, and this serves as a guide to good products.

Your dues,—the ten dollars left after the fifteen dollars is deducted for a year's subscription to the Journal, help pay for AMA's evaluation of drugs and other medical products, a service provided entirely for the benefit of our members and with no charge or obligation to manufacturers. The Seal of Acceptance cannot be bought and only quality products receive this approval. Due to the fact that these seals are so greatly desired by the manufacturers this evaluation program has been extremely valuable to the members in making available to them only quality products.

Special reports for publication in the AMA Journal are prepared by the Scientific Councils on such subjects as Industrial Medicine; National Emergency Medical Service; Nutrition, relation of soil fertility to the nutritional quality of food; and Pesticides. The Committee on Mental Health will also issue special reports. Reprints, of the above mentioned reports are, as a rule, available to members.

Space and time will not permit any detailed statement of other services your AMA offers to members on numerous other subjects and projects. We will only mention briefly these additional services. Your AMA assists research on therapeutic problems financially and by cooperation with clinics and pharmaceutical firms. Recently, in a study of the use of steroids in cancer of the breast, forty-five clinics and fourteen pharmaceutical firms cooperated. Five hundred dollars to individual investigators was authorized and an average of thirty-five to fifty such grants are made annually.

Reports are also made on toxicity of new drugs. Information on quacks and nostrums is available by writing to the Association's Bureau of Investigation.

The Association helps assure good hospitals for you, as a member of the Joint Commission on the Accreditation of Hospitals and also lends financial aid to the Commission.

Your medical records in hospitals are filed by AMA Classification, and in 1937 the Association

edited "Standard Nomenclature of Diseases and Operations", used by seventy percent of hospitals in the United States today.

Your assistants are better trained because of AMA's inspection, classification and approval of schools for laboratory technicians, occupational therapists, physical therapists, X-ray technicians.

AMA offers Public Relations tips for your secretary or nurse in the manual, "Winning Ways with Patients", a copy of which will be sent you on request. Public Relations aids for doctors are available, and a pamphlet on office public relations for the practicing physician will be mailed to you free of charge upon request to the AMA.

You can help in filling that waiting room table by requesting from AMA copies of many attractive pamphlets for this purpose. Some of these would include "Your Money's Worth", "A Doctor for You", a cartoon-style pamphlet, "The Amazing Story". Reprints of informative magazine articles may be obtained. You may, also, secure public relations literature free by writing to your Association's Public Relations Department.

By writing to AMA's Bureau of Health Education, you may secure pamphlets including, "How to be a Good Patient", "Getting Ready for Married Life", "Adoption", "Master Key to Restful Slumber", to reinforce your verbal instructions to your patients. Single copy free,—quantities will be furnished you at cost of publication.

"Today's Health", published by AMA will teach your patients about sound health habits and preventive medicine and should be a "must" in your waiting room. It is offered to physicians at a special low rate of $1.50 per year.

Information on medico-legal problems can be obtained by you or your attorney on a loan basis. In addition to this service, the attorneys on the staff of AMA's Bureau of Legal Medicine and Legislation will gladly answer inquiries on medico-legal problems pertaining to partnerships, selling a practice, relationships between injury and specified disease, ownership of X-rays, income deductions and medical testimony in general. "Abstracts of Court Decisions on Medico-legal Cases" may be purchased for permanent reference from the "Order Department" at AMA headquarters.

AMA represents you before Congress. This is a most important and valued service of your Association, studying all bills before Congress and supporting or opposing said bills as they may affect organized medicine. This service necessitates the study of over five hundred bills and the giving of testimony before the respective Committees in the House and Senate, fighting against the passage of bills detrimental to our profession and our patients and supporting those bills which would benefit "organized medicine" and improve health conditions throughout the nation. This AMA Legislative Committee performs a valuable service and should have the support of all our members. You can be of inestimable aid to this Committee in contacting your Congressman or Senator and requesting their help in supporting or opposing legislation as the case may be. You may be assured that your assistance is greatly needed and will be more than appreciated. You can obtain copies of bills and detailed information on federal medical legislation by writing the AMA Washington office, 1523 "L" Street, N. W., Washington 5, D. C. This is another of the many services our members receive, in addition to the Journal, for their twenty-five dollars.

AMA keeps records on all physicians. These records are started as soon as you enter a medical school and continue throughout your medical career, listing your birthplace, date of birth, the school from which you receive your M. D., the year of your graduation, whether or not you are a specialist, and your current home and office address. These records are of great help in compiling the "American Medical Directory".

Your Association encourages ethical medical practice. It has been said that one of the paramount reasons for founding the American Medical Association was to develop an accepted code of ethical conduct for physicians. The present AMA "Principles of Ethics" have been evolved through the years by action of the House of Delegates. They are interpreted by the Judicial Council, which serves as Medicine's Supreme Court.

This list of services which the AMA can and does offer you, as a member, has necessarily been condensed and is incomplete. Your Association, more or less, works in all areas of medicine, and can furnish you information in all fields pertaining to your profession, or can direct you to some other source, where such information can be obtained. You should remember that your Association is always eager and willing to help you in your practice.

Of course your membership entitles you to the further facilities of AMA in the use of medical, health films, exhibits for public or professional audiences, pamphlets to be used at fairs or public meetings, posters for school or industrial health education efforts, loans of radio transcriptions for broadcasting over local station, and TV films for use by Parish or District Societies over local television stations.

Dr. George Lull, Secretary and General Manager of the American Medical Association explained or portrayed the role a member plays in the work of the Association very well when he so aptly said that "an active, informed membership begins with your Parish Society, for the AMA is only as strong, only as progressive, only as active as the sum total of its component societies. It is in your Parish society that you

have your vote in organized medicine. It is through your Parish society that the medical profession can make itself felt as a group in your community life. Your role in organized medicine begins with the Parish Society."

It is equally important in this complex age that you be active in and informed about state and national medical affairs as well. Your AMA Journal provides you with a wealth of information. You can write either to your state society or to the AMA for still more information. Every member is always welcome at his state society office or at AMA headquarters. Visit them and find out for yourself. Attendance at state medical meetings is important, and a trip to an AMA meeting a unique experience. If you can tear yourself away from the maze of exhibits and other scientific attractions, visit your Association's House of Delegates. This body holds open meetings. Any member is welcome. Indeed, any member has the right and the privilege to appear and testify before any reference committee of the House.

Only if you are an informed, active member of the AMA will you benefit fully from its many services. And only then will AMA benefit from the suggestions, the ideas, and the service which you can contribute.

In order to continue its many services to the profession and the public, your Association needs your financial support. Of your $25.00 dues, $15.00 goes for your Journal subscription. Only ten dollars a year goes to pay for AMA's countless other activities. Compared to the dues received and the services rendered by other national organizations, you are getting a bargain. This is particularly true when it is remembered that for its first 100 years AMA received no membership dues at all!

You are the American Medical Association. You share in its prestige and its strength. You also must bear a share of the criticism it receives. Your Association asks from its members the loyalty to refrain from attacking it without knowledge; the loyalty of working from within to effect change rather than throwing rocks from without; the kind of loyalty that will make a member accept criticism of the AMA as criticism of himself, and, if the criticism is unjustified, defend his Association, or, if it is justified, take steps to correct the situation.

It should be well understood that, in order to participate in the many facilities and services accorded you as a member of the AMA you first have to become a member of your Parish or District, and State Societies.

We therefore urge and invite you to go the whole way with us, in joining up with your national association, thereby helping us to fight for the rights of our profession.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

MEDICAL EDUCATION SEEN AT CROSSROADS

America's medical schools face a crisis which can only be resolved by increased public interest and support, according to a 25-cent pamphlet, "The Challenge to Medical Education" just published by the Public Affairs Committee, 22 E. 38th Street, New York City.

Chancellor Henry T. Heald of New York University in an introduction calls attention to one of the main challenges faced by these "complex centers for training" by pointing out that "doctors are called up less and less to heal the sick and more and more to keep people well. Medical education must not only keep abreast of society's needs; it must anticipate them."

"In many ways, the medical establishment of our nation is stronger than it ever has been before," declares the author, Robert M. Cunningham, editor of *Modern Hospital*. "Every year,

more doctors care for more people, using more buildings, equipment, supplies, and helpers than in the year before. Year after year, new hospitals are built, offering their new facilities and their trained staffs for use by the medical profession.

"Nevertheless," he adds, "a threat to the nation's health does exist—the more serious because it lies hidden behind the spectacular medical achievements of our time and because it is a danger not so much to our present strength as to our future growth.

"The danger is that our great medical schools —the source of our supply of doctors and the medical advances of tomorrow—may not find the money and manpower to keep growing . . . as the body of our medical knowledge expands year after year," Mr. Cunningham asserts.

"By any estimate," he continues, "medical education is far more costly than education in most of the other professions . . . No other kind of education requires so much laboratory space and equipment and so much money to support the all-important dispensary and hospital services for clinical instruction."

Since the average medical student can afford to pay only about one-fifth of the cost of his training, the schools must find additional sources of support to offset the increasing costs resulting from modern scientific advances.

"Plainly, more and more groups must accept an increased share of responsibility for the support of medical education," Mr. Cunningham writes, "if we expect the schools to perform fully and effectively in the future."

The price of this pamphlet is 25¢ and may be obtained by contacting the Public Affairs Committee, 22 East 38th Street, New York City.

CLINICAL HEMATOLOGY COURSE

A three-day continuation course in Clinical Hematology will be presented at Tulane University beginning March 23, 1955. Dr. C. V. Moore, Dean and Professor of Medicine at Washington University, has accepted an invitation to be the guest speaker. Registration is now open to all physicians but will be closed March 1, 1955.

The program will be built around actual cases insofar as possible and will include discussion of the anemias, leukemias and lymphomas, polycythemia, purpura, problems of blood transfusion, and blood coagulation. Those interested should contact the Director of Graduate Medicine, 1430 Tulane Avenue, New Orleans, Louisiana.

BLAMES SEX HYSTERIA FOR DOUBLING ILLEGITIMATE BIRTHS AMONG 'TEEN-AGERS

The current wave of sex hysteria is bearing fruit in an increasing number of illegitimate births and a distressing problem of "bosom consciousness" among 'teen-agers, a Portland (Ore.) obstetrician and gynecologist reported at the Sixth Annual Congress on Obstetrics and Gynecology on December 14, 1954.

Speaking in the Palmer House before The Sixth American Congress on Obstetrics and Gynecology, Dr. Goodrich C. Schauffler said illegitimate births in the 'teen-age bracket have doubled in the last 15 years.

"This depressing fact is certainly significant of the general trend in relation to precocious sex activity," Dr. Schauffler said. "It must be recognized as a background to the observation that there is a greatly increased awareness of sex in the younger group, stimulated and maintained by sex hysteria, which is a calculated instrument of modern journalism and so-called entertainment trends.

RICHEST SOURCE OF VITAMIN C NOW READY FOR WORLD

A neglected backyard tree is about to give to the world its "richest known source of vitamin C" and to Puerto Rico a possible answer to its old one-crop economy problem.

After almost 10 years of efforts by scientists to interest "the giants of the food industry" in the potentialities of the "fantastic" acerola tree, the first commercial crop finally has been produced and is ready for the market.

The fruit is known as Puerto Rican cherry, West Indian cherry, acerola, or several other names. The three grows semi-wild in the Caribbean islands where natives say a tree in the back yard will "keep colds out of the front door."

And a six-ounce glass contains as much as 8650 milligrams of vitamin C—more than 85 times as much as a six ounce glass of fresh orange juice. It would take over 50 pounds of fresh raw cabbage to give the same amount of vitamin C as a glass of acerola juice.

The fruit is the size of an ordinary red cherry but is shaped more like a crab apple. Its taste is "tart and refreshing" and the tree bears four crops a year.

How the tree finally was developed commercially is told by Mrs. Anna May Wilson in the November Today's Health magazine, published by the American Medical Association. Her husband, Dr. James R. Wilson, director of the A.M.A.'s Council on Foods and Nutrition, was the man who interested orange juice millionaire Harvey Greenspan, Miami, in the acerola.

RISK TO EXPECTANT MOTHER WITH HEART DISEASE IS MINIMIZED

The outlook for the expectant mother with heart disease is most hopeful, a Minneapolis obstetrician reported at the Sixth Annual Congress on Obstetrics and Gynecology.

"With early appraisal, frequent examinations and vigorous medical care, the death rate can be

reduced to 1 per cent or less," Dr. Olga Hansen Litzenberg said at a symposium on medical complications of pregnancy before The Sixth American Congress on Obstetrics and Gynecology at the Palmer House.

The maternal mortality among women whose heart disease restricts their physical activities only slightly or not at all is only a little higher than in a comparable nonpregnant group, Dr. Litzenberg added. The death rate of infants is no greater, she said.

ASPIRIN CALLED BEST DRUG FOR MILD HEAD INJURIES

"Aspirin is the best drug for managing the ordinary restlessness, irritability and headache" which follow mild head injuries in children, according to Dr. Donald D. Matson, Boston neurosurgeon and assistant professor of surgery at Harvard Medical School.

When necessary, Dr. Matson writes in *Postgraduate Medicine* (3:16,1954), a physician may prescribe small amounts of Demerol or codeine to supplement aspirin. As a general rule, he cautions against the use of barbiturates.

Treatment of shock is a vital measure in all head injuries. The procedure usually effective in mild injuries includes: relief of pain with aspirin, simple warmth, reassurance and quiet. If treatment is carried out at home, parents should observe the child's alertness, motion of extremities and equality of pupils at set intervals.

PREGNANCY NO LONGER MORTALITY FACTOR IN POLIOMYELITIS

The pregnant poliomyelitis patient now has as good a chance for life as the non-pregnant polio victim, according to a report made at the Sixth Annual Congress on Obstetrics and Gynecology on Dec. 14, 1954.

Dr. Paula Horn of the University of Southern California School of Medicine, Los Angeles, said a five-year study at the Los Angeles County Hospital showed the death rate in pregnant adult women stricken with polio has now by modern care been cut to the same level as that of non-pregnant adult women—4 per cent in each instance. A few years ago the polio pregnant death rate was nearly 11 per cent.

Dr. Horn spoke in the Palmer House at the opening of the five-day Sixth American Congress on Obstetrics and Gynecology, sponsored by The American Committee on Maternal Welfare, Inc., and the American Academy of Obstetrics and Gynecology. The meeting was attended by about 3,500 physicians, nurses, public health officials and hospital administrators concerned with better care for mothers and babies.

The report covered 1,545 adult females stricken with polio in the five years, 1948-1952, inclusively. Of these, 225 women were pregnant. Nine deaths occurred in that group. There were 53 deaths among the 1,320 non-pregnant patients. The five-year mortality rate in each instance was 4 per cent.

In 1948, the first year of the study, there were five deaths in 65 pregnant women, or 7.6 per cent. Thirty-one deaths, or 7.1 per cent, occurred in 438 non-pregnant women. An earlier study, covering the years 1934-1947, inclusively, indicated pregnancy was a contributing factor to mortality, the rate being 10.9 per cent as against 2.3 per cent in non-pregnant women.

"Since 1948, there have been tremendous improvements in the management of bulbar spinal poliomyelitis," Dr. Horn reported. "Mortality appears to be related to the severity of the disease and not particularly to the trimester of pregnancy in which poliomyelitis was contracted. Mortality is no greater in pregnancy than in the non-pregnant women in the same age group.

"The management of a pregnant woman who contracts poliomyelitis in early pregnancy and continues to remain in a respirator is a prodigious task. This task has been made easier in recent years by the development of a positive pressure attachment to the respirator.

"With this, the respirator may be opened, and the patient can be kept breathing with a mask or endotracheal tube attachment. This greatly facilitates nursing care and certainly enables more adequate obstetrical examinations.

"It has been our experience that the first stage of labor in a respirator patient is 'relatively easy.' From the standpoint of prevention of respiratory depression, they have not been permitted barbiturates or narcotics during their illness. They thus appear to obtain sufficient relief in their labors from 50 mg. doses of demerol.

"Cesarean section can be safely performed in this critically ill group of pregnant women."

SOME PATIENTS DON'T WANT TO BE REASSURED

Sometimes the worst thing a doctor can do is to tell a patient he's perfectly well, a University of Virginia School of Medicine physician said recently.

Dr. Andrew D. Hart, Charlottesville, Va., said some patients don't really want to be reassured. These are the patients with "cardiac neurosis," which may cause real symptoms of heart disease but may only be a substitute or cover-up for greater problems—such as tension and nervousness or fear of mental illness.

He said this type of patient visits the doctor with complaints of heart symptoms, and is told firmly and reassuringly that he has no heart defect. The patient may then go to another, or more than one, doctor seeking another diagnosis. He may quote the first doctor as having said such things as "You have six months to live" or "I've never seen a worse heart than yours." The patient actually may believe this was what

the doctor said—since even normal memory is far from accurate, and nothing is so helpful as recollections to people who "dearly" need to believe something, Dr. Hart said.

ZEPHIRAN MOST EFFECTIVE IN TREATING RABIES WOUNDS

A 1 per cent solution of Zephiran chloride proved the most effective treatment of wounds in guinea pigs artificially contaminated with rabies virus, according to a report in the *Bulletin of the World Health Organization* (10:805, 1954).

Zephiran, a cationic detergent manufactured by Winthrop-Stearns Inc., was found to be the "material of choice" in comparison studies with fuming nitric acid and a soap solution. Persons bitten by a presumably rabid animal should also receive other approved prophylactics, such as anti-rabies vaccine or serum, state Drs. Howard J. Shaughnessy and Joseph Zichis of Chicago.

TEEN-AGE FATIGUE MAY BE PERFECTLY NORMAL

Teen-agers who are often tired and mope around the house may be ill—but are more likely to be quite normal, a New York physician said recently.

Dr. Edward A. Wilkes said teen-agers tire easily for one or more of a dozen reasons, and that most of the problems can be solved without expert help. He described the causes of fatigue in the November Today's Health, published by the American Medical Association.

The major reasons for normal fatigue are rapid growth, too little sunshine and outdoor exercise, social and school pressures with overstimulation and difficulty in sleeping, poor diet or overweight, and common teen-age emotional problems.

ARTIFICIAL VITAMINS

The American public in general is oversold on artificial vitamins, a New York University biologist declared recently.

Addressing the Rotary Club of Hoboken in the Grand Hotel, on November 9, Associate Professor Otto M. Helff of University College of Arts and Science at NYU said normal vitamin requirements could be filled by a wise diet at considerably reduced expense.

"Vitamin capsules and the like have an important place, but most of us get an overdose of vitamins when we buy them at the drug store," Professor Helff said.

"The best advice on vitamins comes from your doctor, and he should be followed precisely whenever vitamins are prescribed as a drug for arthritis, anemia, and other conditions.

"But people who buy vitamins that promise a week's supply of certain vitamin requirements in a one-day dosage are in many cases wasting six-sevenths of the money they pay. The reason is that the body cannot store more than one day's supply of certain vitamins."

EMOTIONAL FIRST AID NEEDED IN DISASTERS

You don't have to be a psychologist to give needed first aid to "emotional casualties" of a community disaster such as a flood, fire or tornado, said civil defense officials.

Knowledge of a few basic rules is all that's necessary to give first aid to a physically injured disaster victim. The same is true of persons who react badly to the emotional shock of a disaster, according to the Committee on Civil Defense of the American Psychiatric Association. Its material on psychological first aid, prepared for use in enemy attack but also helpful in natural disasters, appears in the Sept. 4 Journal of the American Medical Association.

The first need is to understand and control your own emotions and to know your abilities and limitations, so you will be in a position to help others. Then you must "accept every person's right to have his own feelings," however strange they may seem. Your job is to help the victim cope with his feelings, not to tell him how he should feel.

BOOK REVIEWS

On Burns; by Nathan A. Womack (ed.), Springfield, Illinois, Charles C Thomas, 1953, Pp. 179, $5.50.

This book consists of a rather complete and comprehensive coverage of the problem of the burned patient from the time of the initial injury to the time of discharge from the hospital. The salient features of the treatment of burns are presented through the medium of a panel discussion; the panel consisting of Dr. William Altemeier, Dr. James Barrett Brown, Dr. W. J. H. Butterfield, Dr. Truman Blocker, Dr. Julian Bruner, Dr. Stuart Cullen, Dr. Sam May, Dr. Carl Moyer, Dr. Sidney Ziffren.

In the rather informal discussions, which make up the book, one is able to read through the entire problem of burns and their management with a minimum of effort and didactic material. The comments at the end of each chapter are of particular interest since the floor is held open for discussion by all members of the panel.

In the first chapter, the results of the treatment of the burns at the University of Iowa hospitals are given by Dr. Sidney Ziffren. The most interesting part of the paper was the comparison by dividing the cases into two groups—the 1930 to 1940 group, and the 1940 to the 1950 group, significant differences being in the mortality and the incidence of infection and control of infection. The superior results in the second group were attributed mainly to the increased use of plasma and the plasma substitutes, as well

as whole blood and the antibiotics.

In the second chapter, Dr. Stuart Cullen discusses pain and its treatment. The principle stressed is that the burned patient does not necessarily need his routine dose of morphine and that extreme care and thought should be given in order to make the decision as to whether or not the patient requires sedation. It is pointed out that subcutaneous administration of morphine to a patient in shock or near shock can result in the medication not being absorbed, and therefore, the patient derives no benefit from it. Subsequent doses are then given and the shock treated. The result is, that when the shock is treated and circulation becomes adequate, intense narcosis may supervene. It was generally agreed by the panel that the best route was intravenous, so that the effect could be noted within fifteen minutes.

The open treatment of acute burns was thoroughly covered by Dr. Truman Blocker, who presented some statistics showing a decrease in the length of hospital stay, as well as in the incidence of infection. In addition, the need for intravenous therapy was markedly decreased.

Early care and grafting of acute burns was discussed by Dr. James Barrett Brown. The problem of infection and enzyme debridement of the burn or scar are discussed by Dr. William Altemier. Burn shock and its treatment and the use of the plasma substitutes are then discussed by Dr. W. J. H. Butterfield, and Dr. Carl Moyer.

The important points brought out in these chapters were that laboratory tests may not necessarily indicate the true status of the patient and the powers of observation should be used by the physician judiciously before instituting therapy; and then as a guard to the effectiveness of that therapy when instituted. It is recognized that at present we have no uniformity in satisfactory substitutes for plasma, and no method of stock-piling blood in case of an atomic attack. However, at the present time although some hyperpyrexia has been reported with its use, apparently, dextran is the plasma expander of choice.

The treatment of the late burn wound and its contractures was next presented by Dr. James Barrett Brown. The use of split thickness grafts, as well as pedicle coverage are discussed.

Adrenal cortex function and severe burns are discussed by Dr. W. J. H. Butterfield, the nutrition of the burn patient by Dr. Truman Blocker and finally delayed coverage of the burn wound and joint motion is discussed by Dr. Julian Bruner. Dr. Bruner deplores the fact that so many burns leave the hospital with joints which are hopelessly limited in motion and for which physiotherapy offers all too little from a standpoint of restoring normal function.

The book ends with a general discussion by all of the members of the panel.

William J. Champion, M. D.

A Dynamic Psychopathology of Childhood, by Lauretta Bender, Springfield, Illinois, Charles C Thomas, 1954, Pp. 275, Price $7.50.

This is the third book of the Bellevue Studies of Child Psychiatry and is a collection of papers written by Lauretta Bender, Paul Schilder, and their associates, who have been examining, treating, and observing children for the last quarter century in the Psychiatric Division of Bellevue Hospital. It deals with various psychopathological responses in children and considers their effect on subsequent development of personality. Ninety case reports of children with follow-up social histories are presented, along with additional observations on two hundred children. The topics treated are development of language and the symbol, hallucinations, imaginary companions, body concepts, impulsions, compulsions, obsessions, sexual expression of identification conflicts, reactions to death and war, comic books, and the ideology of children. The discussion of each of these topics is general and based primarily on clinical observations. The book should be of interest to professional persons whose work brings them in contact with children, whether these children be emotionally disturbed or well adjusted.

Nancy Simms

Lectures on General Pathology, by Sir Howard Florey (ed.), Philadelphia Pa., W. B. Saunders, 1954, Pp. 733, Price $13.00.

This new British book, as the title indicates, is concerned with a variety of topics in the field of general pathology in contradistinction to the pathology of particular organs. It consists of 37 chapters, more or less in lecture style by 10 contributors, 8 of whom are at Oxford. In addition to the customary subjects of inflammation, primary tissue changes, immunity, pathogenicity of microbes and healing, there are other chapters ranging from fever and edema to the biologic effects of radiation.

Reviewing this book has been a pleasure. It is a delightful blending of the old and the new. Most of the chapters could be read with little effort and were notably free of "literary road blocks." Where the path was rougher, as in the chapter dealing with antigen-antibody reactions, it could probably be attributed to the subject matter. The references at the end of each chapter are very adequate and carefully chosen. It is regrettable that every contributor did not follow the practice of R. G. MacFarlane in indicating briefly the content of each article referred to. Some teachers who use the book may wish that some of the subjects had been omitted and others treated more extensively. It is heartily recommended to all medical students, who should purchase it at the end of their freshman year. The graduate physician of ten years or more will also find much here that he has forgotten and more that is new.

Only $13.00 stands between this reviewer and a copy on his shelf.

E. B. Ferguson, Jr., M. D.

The Digital Circulation, by Milton Mendlowitz, New York, Grune & Stratton, 1954, Pp. 182, Price $6.75.

This monograph on the circulation to the digit is written by one who has devoted a considerable part of his research and clinical time to the study of the peripheral circulation and, in particular, that of the digits of man. His monograph is a fairly comprehensive review of the anatomy, physiology, pharmacology, pathology, methods of study, and disease states of the digital blood vessels. The author has presented well these phases of the peripheral circulation. The only adverse criticism is his failure to have included more, to have been more critical of the work in the literature, and present further his own impressions of the studies of others for the benefit of readers who are less trained in this field. Although it is evident that it was not his intention to cover the subject completely, the material presented could have been evaluated more critically.

Even though, Mendlowitz has concerned himself with the calorometric method for digital blood flow, he presents other procedures employed in the study of the digital circulation. The methods are not described in detail but are well illustrated so as to make readily possible the understanding of the various methods and their relative merits and disadvantages. Surely, anyone embarking upon any studies of the digital circulation would find this monograph useful for orientation purposes as an adjunct to a critical review of the methods of study. Such a review would also be aided by the extensive bibliography included at the end of the book.

Various disease states are discussed briefly. Normal physiologic reactions are also described, including hemodynamic concepts pertaining to the peripheral circulation. It must be remembered, however, for example, that the values for resistance in the vessels of the finger tip are only approximations based upon the limited available objective data. These attempts at precise definitions of the hemodynamic states are important, even though the errors may be large, if the role of the digital circulation in the entire cardiovascular adjustments are to be appreciated.

The book is clearly written and well illustrated throughout and is recommended to those who are interested in the normal and abnormal circulation of man. Obviously, as any monograph, this one is not complete, as is evidenced by the author's attempt to condense his own experience, knowledge, and the contents of 636 publications into 146 pages. Mendlowitz has succeeded in eliminating much of the useless material contained in the medical literature for the benefit of the readers whose time for detailed study of the literature may be limited.

G. E. Burch, M. D.

The Physician and his Practise, Edited by Joseph Garland, M. D., Boston, Mass., Little, Brown & Co., 1954, Pp. 270, Price $5.00.

This book is a collection of articles by eighteen authorities. The various relationships of the physician as regards his family, his neighbor, his patient and his community are presented briefly, clearly and with apparent first-hand knowledge. The business aspects of medical practise in its several forms are well done. Rather than a rigid blue print of proper procedure it attempts a broad approach and succeeds quite well. It is a safe guide for those seeking a way on the threshold of the practise of medicine.

I. L. Robbins, M. D.

Acute Anuria, by Claus Brun. Copenhagen, Ejnar Munksgaard, 1954. Illus. Pp. 215.

This is a 215-page monograph on the acute anuric syndrome by a well known Danish clinical investigator. It is based upon a personal study of 32 patients. In many of these cases, both detailed functional studies and renal biopsies were carried out, and upon this depends the book's particular merit. The author prefers the term "acute tubulo-interstitial nephritis" to other designations of the kidney lesions. Of special interest were two cases which showed a definite oliguria and renal functional changes of moderate severity with only the slightest histologic changes in the biopsy specimens. In the reviewer's opinion the book will be most useful in providing detailed knowledge of the pattern and range of renal functional disturbance encountered in various examples of the syndrome. For this and other reasons it is recommended to students and physicians.

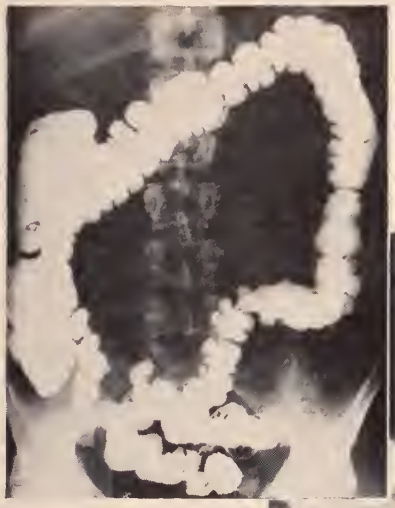
E. B. Ferguson, Jr., M. D.

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W. B. Saunders Co., Phila.: Pediatric Diagnosis, by Morris Green, M. D., and Julius B. Richmond, M. D.; Standard Values in Nutrition and Metabolism, edited by Errett C. Albritton, A. B., M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Hysterectomy, by John C. Burch, M. D., and Horace T. Lavely, M. D.; Surgery of the Elbow, by Frederick M. Smith, M. D.; The Human Brain in Sagittal Section, by Marcus Singer, Ph.D., and Paul I. Yakovlev, M. D.; Hernia, by Chester B. McVay, M. D., Ph.D.; Vaginal Hysterectomy, by Laman A. Gray, M. D.; Hemorrhage of Late Pregnancy, by John S. Fish, M. D., R. A. Bartholomew, M. D., E. D. Colvin, M. D., W. H. Grimes, Jr., M. D., and W. M. Lester, M. D.; Diabetes Mellitus, Objectives and Methods of Treatment, by Henry T. Ricketts, M. D.

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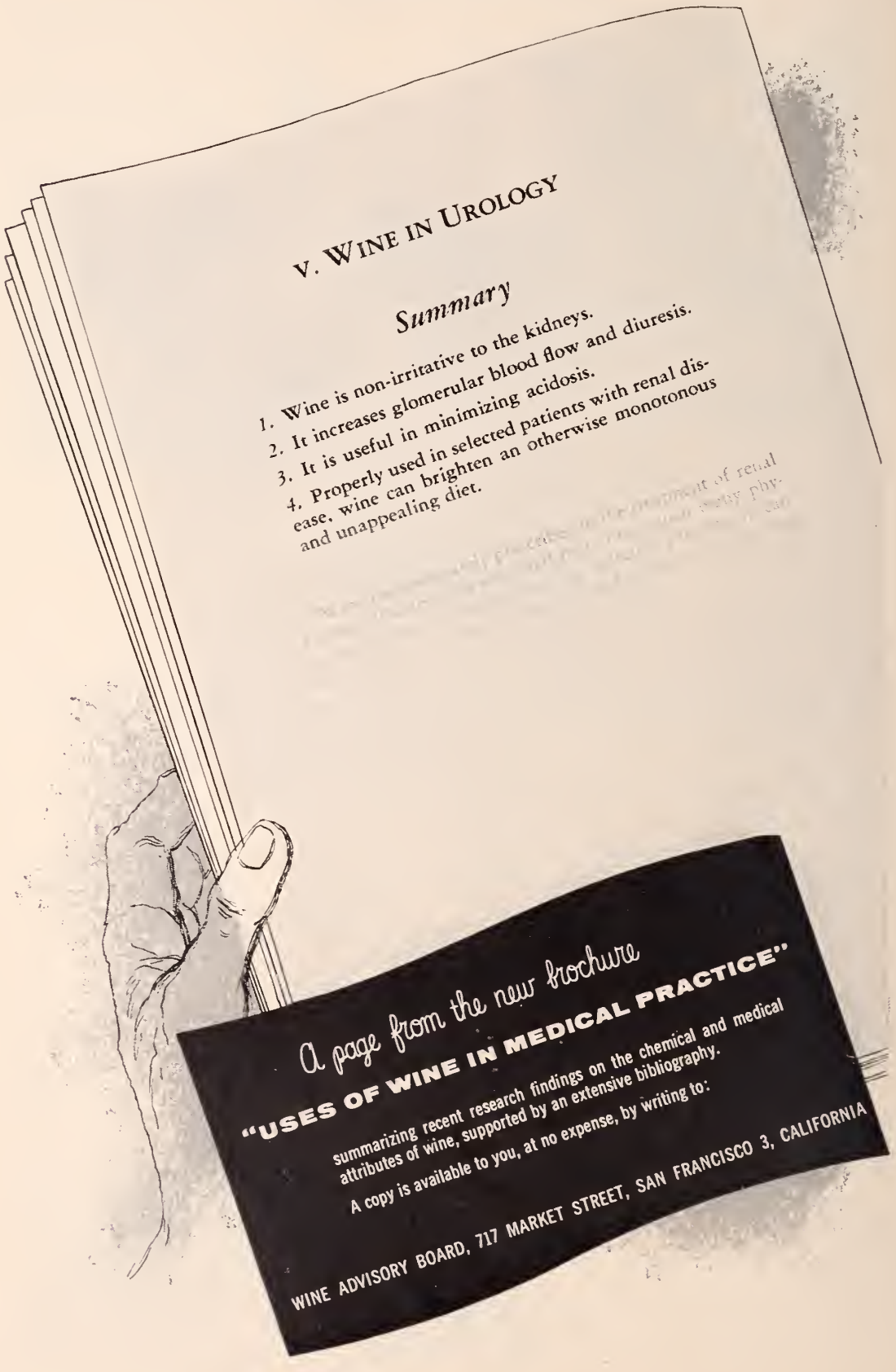
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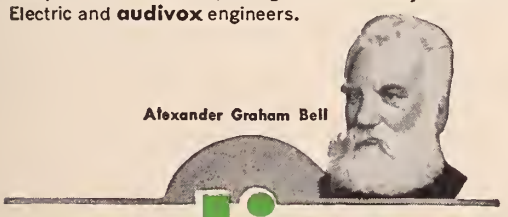
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REFERENCES: 1. Boland, E. W. and Headley, N. E., *J.A.M.A.* **148**:981, March 22, 1952. 2. Ward, L. E., Polley, H. F., Slocumb, C. H. and Hench, P. S., *J.A.M.A.* **152**:119, May 9, 1953. 3. Snow, W. B. and Coss, J. A., *N.Y. State J. Med.* **52**:319, Feb. 1, 1952.



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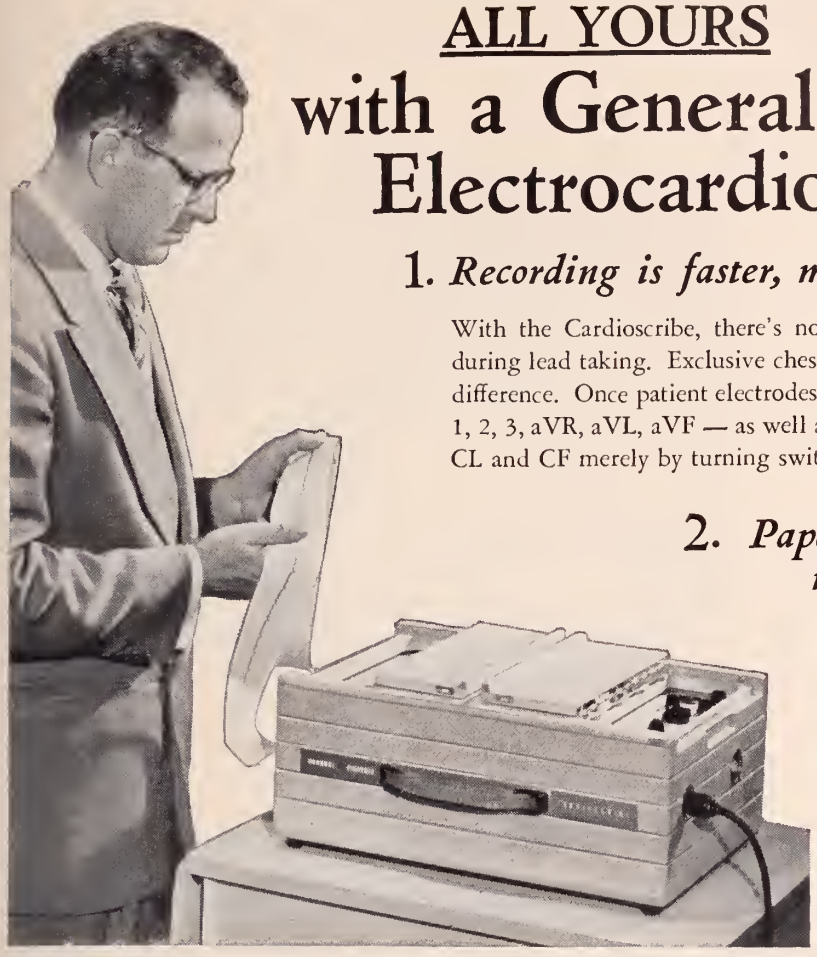
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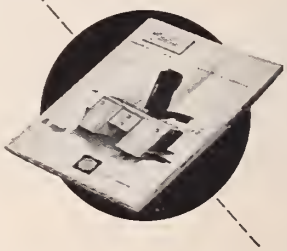
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1. American Medical Association: New and Nonofficial Remedies. J. B. Lippincott Co., Philadelphia, 1954, p. 147.

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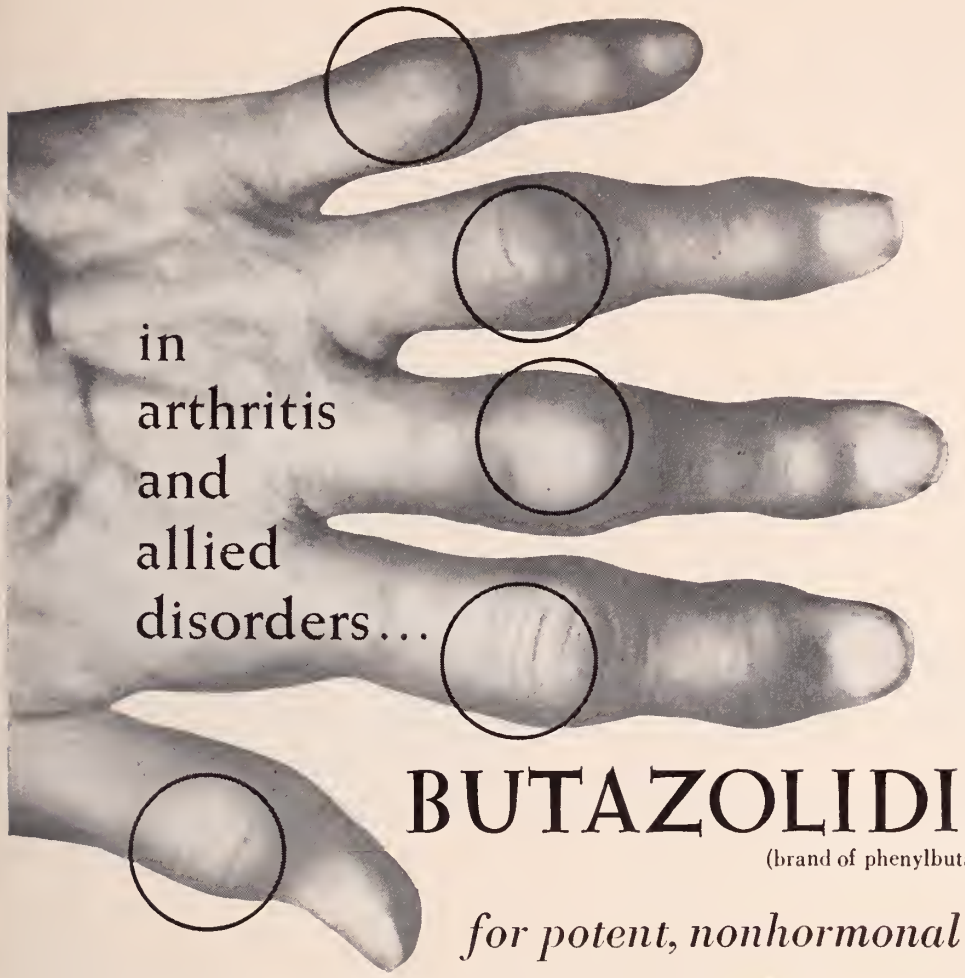
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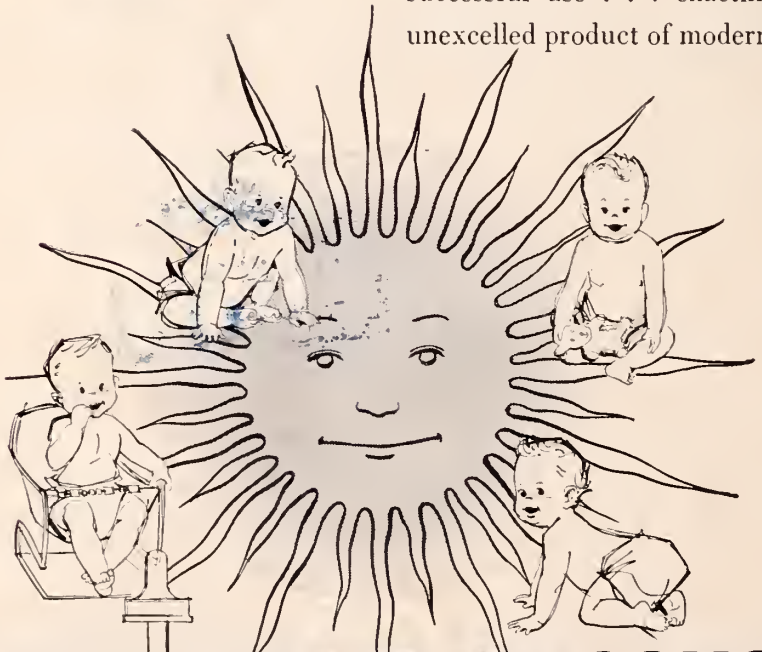
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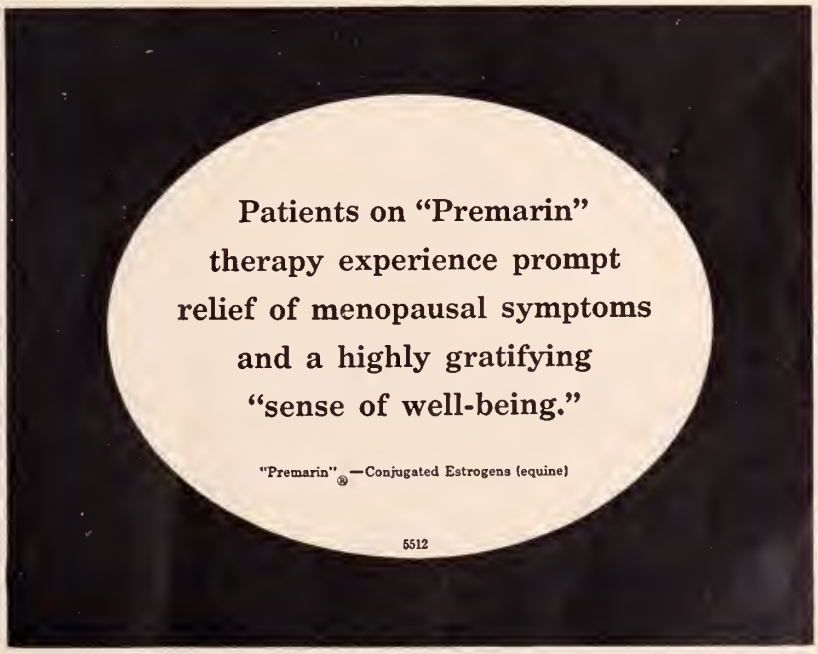
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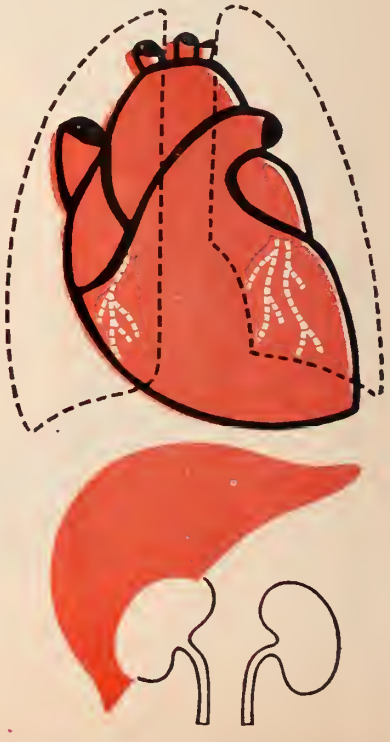
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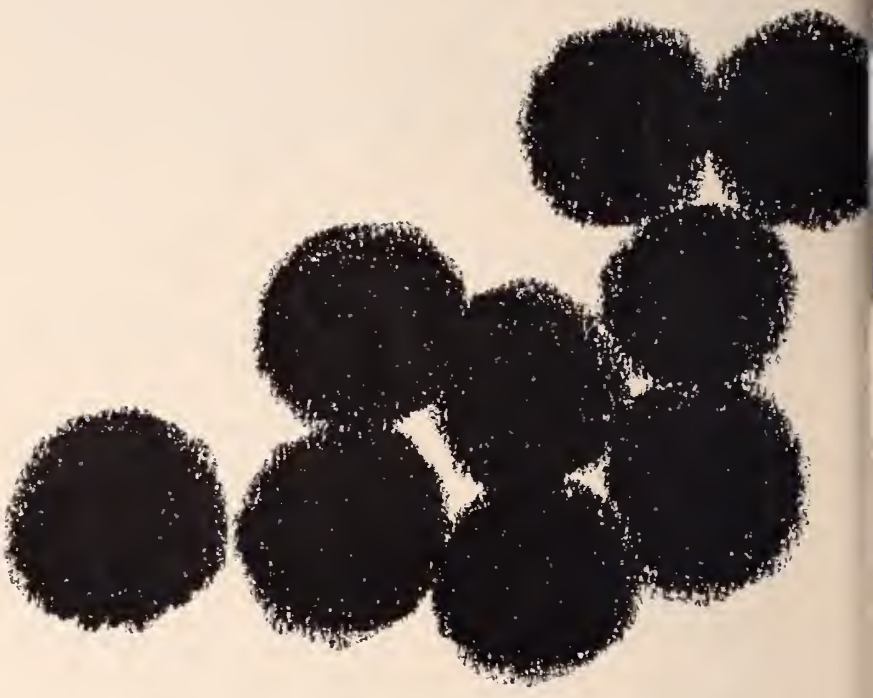
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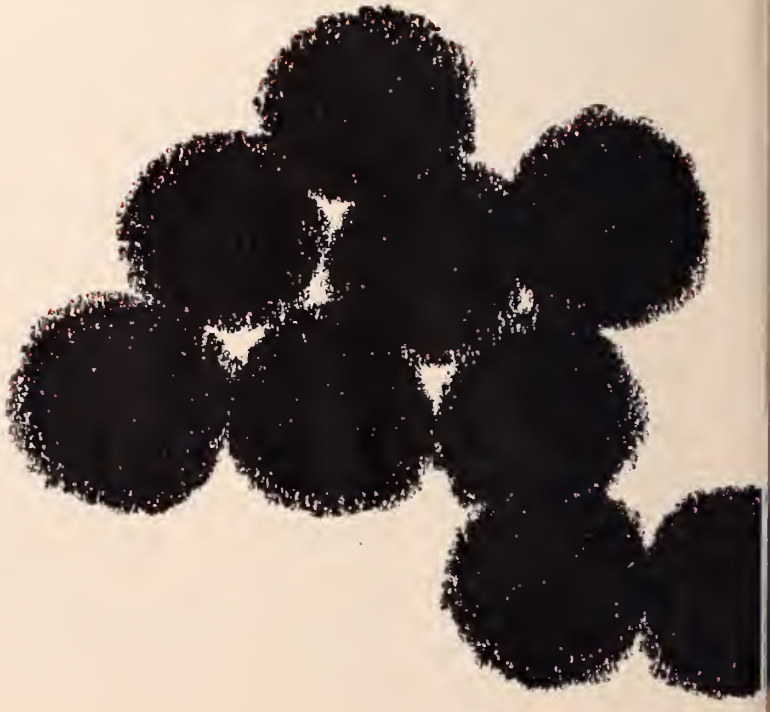
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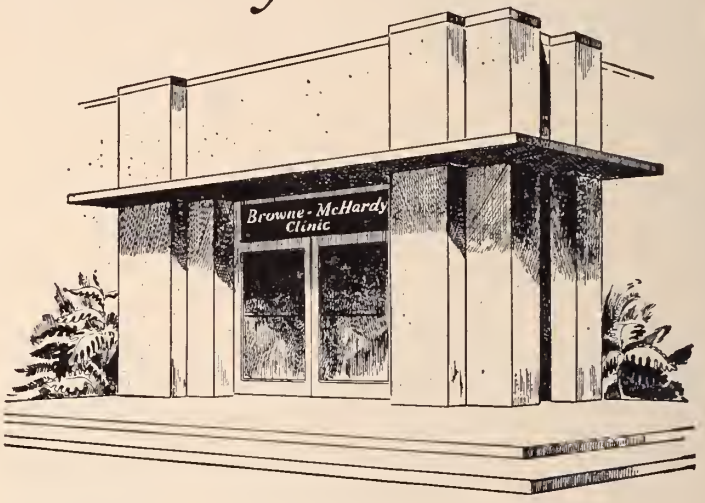
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*Pratt, R., & Dufrenoy, J.: Texas Rep. Biol. & Med. *12*:145, 1954.

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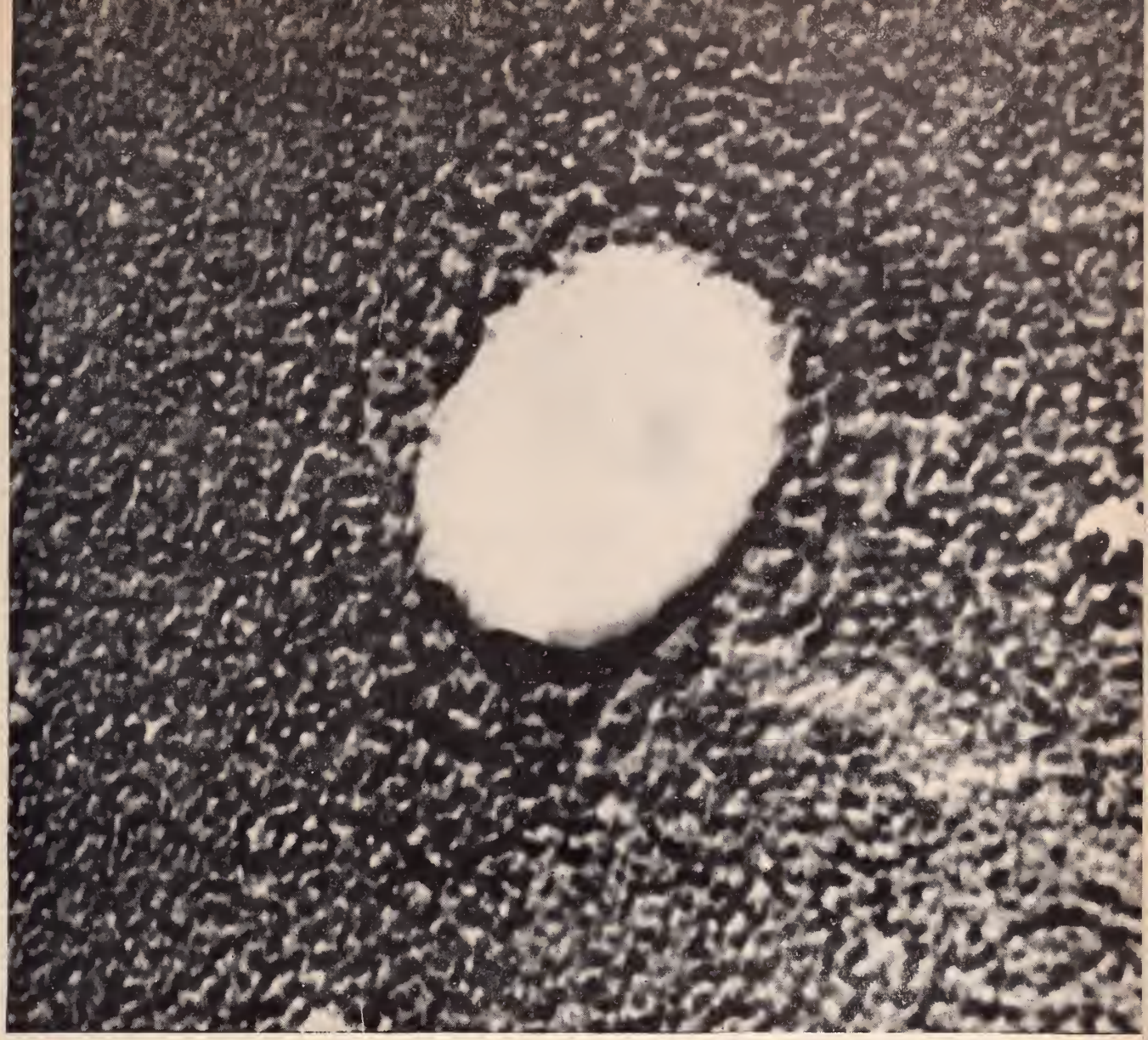
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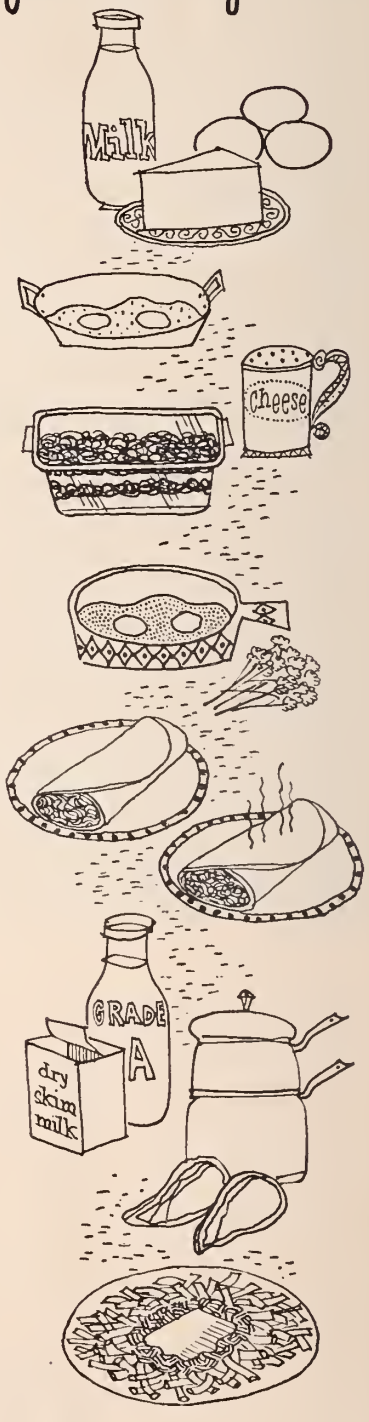
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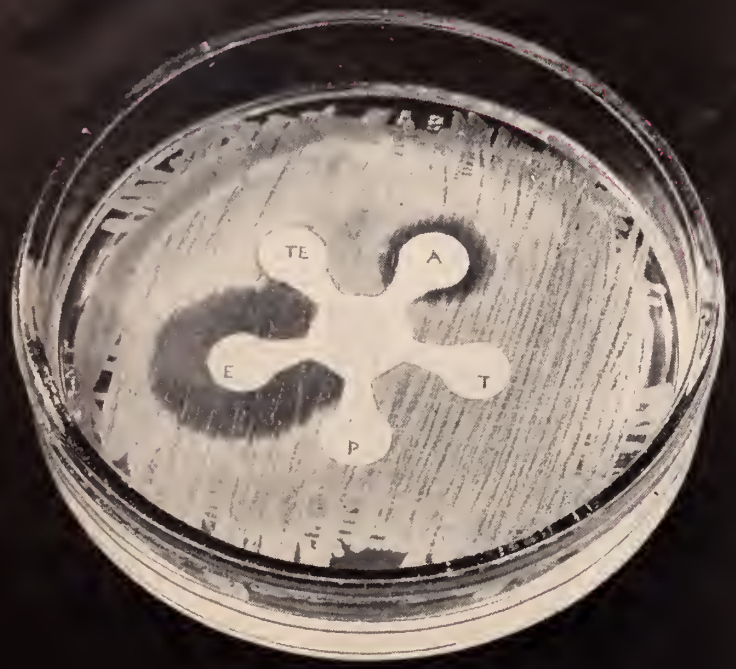
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CURRENT CONSIDERATIONS OF TONSILLECTOMY; WITH SPECIAL REFERENCE TO POSTOPERATIVE BLEEDING *

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BATON ROUGE

In a symposium on tonsil and adenoid surgery recently published in the *Journal of the American Medical Association,* Badger,[1] by way of Mollison,[2] quoted an eighteenth century commentary on the status of tonsillar surgery at that time. The pronouncement was by Samuel Sharp, then surgeon to Guy's Hospital, and it was to the effect that excision of the tonsils was "neither dreadful in the doing nor melancholy in the event." Since Badger's concern was chiefly with the historic aspects of the operation, he did not pursue the implications of Sharp's remark. A number of observers, however, have pointed out that curiously little attention has been paid in the literature to the possibility that tonsillectomy may indeed be "melancholy in the event." When Harlowe,[3] in 1948, reviewed 117 papers on tonsillectomy published between 1910 and 1947, he found, as Jones[4] said, "an amazing variety of complications and a shocking number of deaths."

Loeb's[5] investigation of the situation some twenty-five years earlier had even more shocking implications. At that time approximately 5,000 American physicians, one of every 30 then practising, professed to be qualified in otolaryngology. In an endeavor to determine what results were being accomplished in nose and throat surgery, Jones circularized them all and received 717 replies. Four hundred sixty-seven of the physicians who replied stated that they had never had a fatality after a nose or throat operation. The remaining 250 physicians had had 332 fatalities from causes other than anesthesia. One hundred twenty-six, the largest number of deaths after any single operation, followed tonsillectomy, and of the 55 deaths caused by hemorrhage, 43 also followed this operation. How many deaths occurred in the practices of the more than 4,000 physicians who did not reply to Loeb's inquiries is a justified and rather frightening speculation.

INDICATIONS AND CONTRAINDICATIONS

Although our chief purpose in this paper is to discuss the various aspects of post-tonsillectomy hemorrhage, the operation has become too controversial to warrant passing directly to that subject. We shall begin, therefore, with a brief statement of our own indications and contraindications for tonsillectomy.

The wholesale removal of tonsils, which was never a credit to the specialty, has long since ceased. Indications for the operation, however, are still on somewhat uncertain ground because we still are lacking in knowledge as to the true function of both the tonsils and the adenoids. On the other hand, we are certain that

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From the Department of Otolaryngology, Tulane University of Louisiana School of Medicine, New Orleans.

they serve as a natural defensive lymphatic barrier against invasive infection and that they are essential to the autoimmunization of the young child. Otolaryngologists who believe these things will naturally be very sure of their indications before they advise the removal of such useful structures, and their knowledge will restrain them, as Badger [1] says, from "a multitude of tonsillar sins." In this connection, Dey's [6] study points up a very useful lesson: At the Royal Alexandra Hospital in Sydney, routine removal of the adenoids and tonsils was suspended for eighteen months because of a poliomyelitis epidemic. At the end of this period all 1,415 children on the waiting list were requested to return for examination. When the 681 who responded to the request were re-assessed in the light of their interval histories and symptoms, it was found that 252, well over a third, no longer required the operation. The results of this survey, of course, merely represent a multiplication of experiences we have all had as individuals and they need no elaboration.

In spite of such disconcerting figures, our own feeling is that the present tendency is not to advise tonsillectomy often enough. The surgical indications in this, and in many other, fields have not been altered by the introduction of the antibiotics. These drugs are extremely useful in tiding a patient over an acute attack. They have no permanent effect on intrinsically diseased tonsils and they have no effect at all in some of the circumstances in which removal of the tonsils is justified.

The positive indications for tonsillectomy may be stated as follows:

1. Frequent attacks of tonsillitis with fever and other systemic manifestations. When the tonsils and adenoids have lost their protective properties and have themselves become overwhelmed by infection, they are no longer useful and they are often actually harmful.
2. Recurrent peritonsillar abcesses.
3. Frequent infections of the ear, whether they are suppurative or serous. The present tendency to treat these infections by antibiotics, without puncture of the tympanic membrane and without removal of the tonsils and adenoids when they are identified as the source of the trouble, is one of the chief present-day causes of conductive hearing losses in children.
4. Persistent and recurrent cervical lymphadenopathy, though only after other possible causes have been ruled out.
5. Difficulties in speech, breathing, and swallowing when they are of obstructive origin and are caused by excessive hypertrophy of the tonsils and adenoids. Mere enlargement of the tonsils is not an indication for their removal in the absence of clinical manifestations, especially in young children, in whom they are always disproportionately large.
6. Frequent or continuous head colds.
7. Failure to gain weight and a lack of general well-being. This is a rather frequent indication in children with rheumatic heart disease, whose general health is often greatly improved after the operation.
8. Diphtheria carriers.

There would be no reasonable dispute about the first five of these indications, or about the last. The sixth and seventh may be debatable, and we would resort to the operation on these indications only after careful investigation of all other possible causes. Our experience is that the results are good enough, in enough cases, to warrant tonsillectomy under these circumstances. We do not, however, perform tonsillectomy on prophylactic indications, when there is no disease of the local tissues. Like other otolaryngologists, we have found that the more clearly the symptoms can be referred to the tonsils and adenoids, the better are the end-results. When the operation is performed on indications as vague as those on which operations for so-called chronic appendicitis are often performed, the end-results are likely to be just as poor.

The literature on the possible relation-

ship between tonsillectomy and the development of poliomyelitis, particularly the bulbar and bulbospinal varieties, has always been disturbing and has become massive. There is no particular point to reviewing it here. The possible relationship has been recognized for a quarter of a century and the statistical studies are often contradictory. In our own opinion the discussion has always seemed rather foolish. Tonsillectomy is practically always elective surgery. One would not perform any other elective surgery in the midst of an epidemic of measles or influenza or any other contagious disease, and there seems equally little point to performing, under similar circumstances, an operation which in all but the most exceptional cases can quite well be postponed. The most obvious reason for withholding tonsillectomy in the midst of any sort of epidemic is that one has no way of knowing whether the child was exposed to the prevalent disease before operation or will be exposed to it, in the ordinary course of events, immediately afterward.

A more serious consideration is whether, as several recent reports seem to indicate, the removal of the tonsils at any time in life predisposes to the development of the severer types of poliomyelitis. In Top's [7] study from a Detroit hospital, for instance, tonsillectomized patients, who comprised just over half of the series of 1,947 cases, furnished just over 85 per cent of the cases of bulbar poliomyelitis, more than two-thirds of the spinobulbar cases, and 43 of the 46 deaths in the series. Miller's [8] report on 3,601 cases from Los Angeles County in 1949-1951 suggests that neither recent nor remote tonsillectomy has anything at all to do with the development of poliomyelitis. A separate survey on 675 patients with the disease showed that the incidence of the operation in this group was slightly less than its incidence in the general youth population. We ourselves doubt that remote tonsillectomy has anything more to do with the development of poliomyelitis than remote appendectomy, the next most generally performed operation. We do believe, however, that the possibilities now under study furnish one more reason for being very certain that tonsillectomy is indicated and that the risk which may be inherent in it, immediate or remote, should be weighed against the risk inherent in the retention of the tonsils.

The Risks of Adenotonsillectomy

According to Clein,[9] who is probably right, tonsillectomy accounts for about a third of all surgery performed in the United States and is performed some two million times each year. According to Boise,[10] who is probably also right, the performance of the operation by untrained physicians accounts for the fact that at least one in every five tonsillectomies and one in every two adenoidectomies are poorly executed. The underlying reason for this state of affairs is the performance of the operation by so many physicians who have had no training at all in otolaryngology. It is generally stated, in fact, that it is more often performed today by physicians who do not specialize in otolaryngology than by specialists in the field.[11] Whether or not that is true, there is no doubt that poor technique accounts for a very large number of the fatalities and complications that follow this operation. There is also no doubt that a major explanation for poor technique is the general custom of considering adenotonsillectomy as minor surgery. It most definitely is not. Quite aside from any other consideration, as McKenzie [12] has well put it, no operation in which the surgeon must work at the very entrance to the whole bronchial tree should be considered in any way minor.

Postoperative Hemorrhage

As a background to our personal experience with postoperative hemorrhage after tonsillectomy, certain statistical data might be presented (Figure 1):

In 1927 the population of the Baton Rouge area, in which our practice lies, was not quite 40,000. By 1953 it had multiplied 3.75 times and was in excess of 150,000.

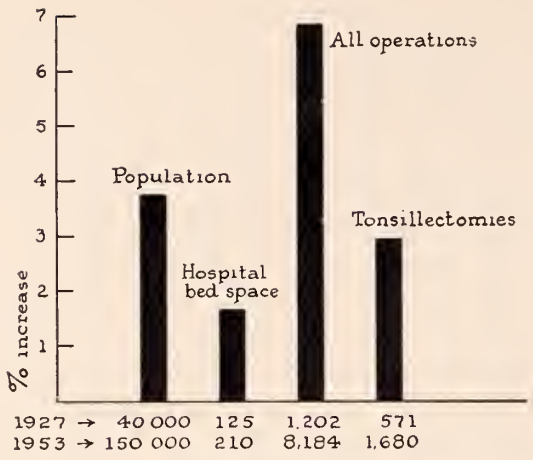


Figure 1. Percentage changes in population of Baton Rouge area, hospital bed space in Our Lady of the Lake Sanitarium, and all operations and all tonsillectomies performed there 1927-1953.

In 1927 the bed capacity of Our Lady of the Lake Sanitarium, where our work is done, was 125, exclusive of bassinets. By 1953, it had been increased 1.68 times and was 210, again exclusive of bassinets.

In 1927, the major and minor operations performed at this hospital numbered 1,202. In 1953, 8,184 operations were performed, more than 6.88 times more.

In 1927, the total number of tonsillectomies, with and without removal of the adenoids, performed at this institution totaled 571, 47.5 per cent of the total number of operations performed (Figure 2). In 1953, the number had risen to 1,680, 2.94 times more, but adenotonsillectomy now constituted only 22.7 per cent of the total number of operations performed.

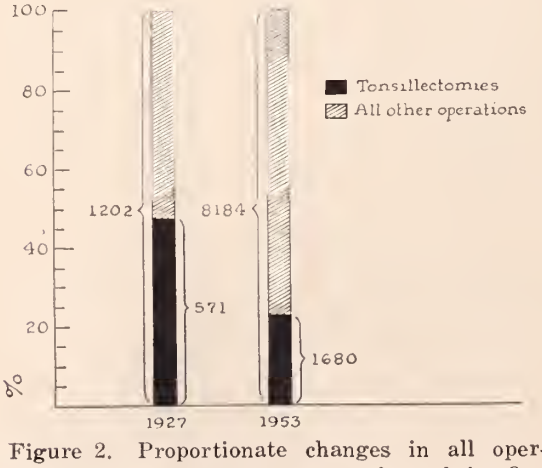


Figure 2. Proportionate changes in all operations and all tonsillectomies performed in Our Lady of the Lake Sanitarium, Baton Rouge area, 1927-1953.

What these figures suggest is that while the prospective candidates for tonsillectomy, as estimated by the regional population and the facilities for its performance, have increased approximately 3½ times and 1⅔ times, respectively, the proportionate use of the operation, as related to the surgery done in the hospital, has decreased by well over half. Obviously, the conclusion is justified that otolaryngologists in the Baton Rouge area are not abusing the operation.

Over the past ten years we have performed, in our private practice, 2,739 tonsillectomies, most of them combined with removal of adenoids. All of them, it is scarcely necessary to emphasize, were performed in the era when some indication existed for the operation other than the fact that the tonsils were still in situ.

The incidence of bleeding after operation, including all bleeding which occurred in the hospital or which occurred outside and was of sufficient degree to make the patients or the parents of the patients inform us of it, was as follows:

82 instances of primary bleeding, in 37 of which packs had been required at operation. This category includes all cases of bleeding which occurred within twenty-four hours of operation.

160 instances of secondary bleeding. These hemorrhages occurred more than twenty-four hours after operation and were distributed as follows:

103 instances of secondary bleeding in 1,679 operations (6.13 per cent) performed before the introduction of penicillin.

57 instances of secondary bleeding in 1,060 operations (5.37 per cent) performed after the introduction of penicillin. The slightly smaller proportion of bleeding in the post-penicillin era is not statistically significant but is interesting in view of the opinion of some observers, which we do not share, that the antibiotics

tend to influence blood coagulation adversely.[13]

Nine of the 160 patients who bled secondarily (5.6 per cent) had also either bled primarily or had required an adenoid pack at operation. Three of these operations had been done in the pre-penicillin era and six afterward, but the difference in incidence, although considerable (2.9 per cent against 10.5 per cent) concerns too small a number of cases to permit any conclusions at all.

PROPHYLACTIC CONSIDERATIONS

Our chief preoperative precaution is a detailed inquiry as to a possible bleeding tendency in the patient. This requires questions about previous injuries, operations, and extractions of teeth. If there have been no such experiences, a further inquiry is made into the family history, not stopping with the parents but getting such information as is possible about other male ancestors.

The hospital runs routine bleeding and coagulation time tests on all candidates for tonsillectomy. We do not regard them as of any special value if they are done independently, though they may be useful, as some observers note, if a medicolegal issue should be raised. If, however, there is a history of any tendency toward bleeding, the patient is studied exhaustively by a complete study (red and white blood cells and differential study), coagulation and bleeding times, platelet count, capillary fragility, clot retraction, prothrombin time, fibrinogen, and plasma clotting time. Sedimentation rates are determined in all cases of current or recent infection.

Adults are given the usual sedation and narcosis before operation. Children under 14 years of age are given no sedation. Respiration in childhood is easily depressed and we see no point to increasing the risk. With a competent anesthetist and the use of modern anesthetic methods there is no difficulty in putting a child to sleep.

All of the operations in this series were done by the dissection and snare technique, with the Davis-Crow type of mouth gag. All of the adenoidectomies were done under direct vision, with the Love retractor, the LaForce adenotome, and Hartman punch forceps.

We have no feeling about operating on young children when it is clearly necessary, though we prefer, unless our hand is forced, to defer surgery until after the second birthday. If it is required by recurrent attacks of tonsillitis or for any other reason, we proceed, with due precautions.

Our policy is always to perform the adenoidectomy first. We regard this sequence as so important that we invariably book the operation, contrary to the usual practice, as adenoidectomy and tonsillectomy. If the child is under 20 months, only adenoidectomy is performed. In children between this age and 30 months, tonsillectomy is proceeded with if the adenoidectomy has given rise to no difficulties and has not been unduly prolonged. Otherwise, the operation is concluded with the removal of the adenoids.

Special attention is always paid to hemostasis, because carelessness in this regard is the most frequent cause of hemorrhage in the immediate postoperative period. We quite agree with Emerson's [14] remark that the techniques of modern surgery have long been neglected by otolaryngologists and we try not to commit that sin of omission. We are always chagrined when primary bleeding occurs from the tonsillar fossa because we regard it as our responsibility.

We try, as far as possible, to employ an atraumatic technique. Carlessness in this regard may mean damage to the wall of a blood vessel, which may rupture in the weakened area when the blood pressure has returned to normal levels. If at the end of the operation there is still oozing from the adenoidal region a postnasal pack is inserted. The tracheobronchial tree is aspirated at the conclusion of the operation whenever it is known or suspected that blood has been aspirated.

After operation the patient is watched carefully until he is fully reacted from

anesthesia, partly to see that a satisfactory airway is maintained and partly to detect possible bleeding. A young child is never left alone at any time. All patients are observed regularly while they are in the hospital, and one or the other of us always inspects them at night rounds, six or eight hours after surgery.

When the patient leaves the hospital, usually twenty-four hours after operation, he is provided with written instructions. The period of bed rest is determined by the necessities of the individual case. Bathroom privileges are usually permitted. Instructions are given as to the use of mouth washes, laxatives and other matters, including diet. Because we have no fear that the taking of food will injure the throat, we recommend prompt resumption of the usual diet. Tomatoes, tomato juice and highly seasoned foods are prohibited, but only because they will burn the throat, and the patient, especially if he is a small child, will hesitate to take more food. The taking of solid food keeps the throat and regional muscles supple, while the mere act of swallowing keeps the pharynx clean. Liquids and soft foods do not have this effect.

Sulfathiazole gum is chewed for thirty minutes every four hours during the day. If the throat is painful, the patient may chew aspergum, which contains 3.5 gr. of aspirin per piece, or may take aspirin, preferably before meals.

ACTIVE THERAPY

Primary bleeding after tonsillectomy, if it is of any consequence, requires prompt action. The patient is at once taken back to the operating room and the bleeding point is sought for, the precise procedure depending upon the special case. If the bleeding is from the tonsillar fossa, ligation or suture is employed. If it is from the nasopharynx, a pack is employed. We prefer not to use general anesthesia, because we believe that it adds to the hazards of the hemorrhage. A dose of sodium luminal is usually all that is required. In two instances in this series, however, anesthesia was employed, on special indications; one of the patients was a very large man and the other a very large child and in both exposure of the bleeding point was impossible otherwise.

Secondary bleeding is treated routinely by the intramuscular injection of double-strength U.S.P. posterior pituitary extract. Adults receive a total dosage of 15 minims, given in 5-minim doses at intervals of fifteen minutes. Children under 6 years of age receive a total dosage of 12 minims, also given fractionally at fifteen minute intervals. When we first began to use this method we employed ring forceps to remove any clot which might be present. This has been found to be an unnecessary manipulation, since the clot is promptly squeezed off as the constrictor action of the drug begins to take effect.

This method has now been employed in 160 cases of secondary post-tonsillectomy bleeding. Fourteen patients continued to bleed after the injection and had to be treated by pack, suture or ligation. In the other 146 cases bleeding ceased promptly and permanently after a single injection of pituitrin.

COMMENT

The use of pituitrin in post-tonsillectomy bleeding was first reported by one of us (J. W. McL.) in 1944,[15] and again in 1948.[16] At neither time was it known that this method had previously been suggested for tonsillar and nasal hemorrhage by Salinger,[17] in 1918. In all of Salinger's 100 cases, however, the injection was given prophylactically. It was repeated in a few of the 13 cases in which postoperative bleeding occurred. We have never employed pituitrin prophylactically and are, in fact, opposed to routine medication for hemostasis, which should be achieved directly at operation, with hemostat, tie, suture or pack as indicated.

The rationale of this method is the established constrictor effect of double-strength posterior pituitary solution on the arterioles and capillaries.[15] The drug is also known to decrease the flow of blood to the coronary arteries, and for this reason, it must never be used in patients

with cardiac disease. We have observed this precaution faithfully, and the only side effect we have noted is occasional abdominal pain, which disappears when the bowels have moved, as they do at once.

This is a simple, extremely effective method. As a precaution, we re-hospitalize all bleeding patients before the injection is given, but a stay of only a few hours is required. One of the advantages of the method is that its simplicity does not add to the panic which patients, and especially the parents of young children, so often feel in the presence of bleeding. The promptness with which the hemorrhage is controlled has the same effect.

Jones,[4] in a comprehensive review of the literature in 1953, discussed the various causes which had been advanced for secondary bleeding after hemorrhoidectomy, including climatic factors, the administration of various vitamins with and without acetylsalicylic acid, and the use of chemotherapeutic and antibiotic agents. There is no doubt that one cause of the secondary hemorrhage which sometimes occurs about a week after operation may be the separation of the membrane, which is cast off, as a slough, from the tonsillar fossa. Otherwise, with the exception of infection, none of the other possible causes of hemorrhage seem very convincing.

When Neivert,[18] in 1945, published his studies on prothrombin time after tonsillectomy, which seemed to implicate acetylsalicylic acid as a cause of postoperative bleeding, we began a similar study in our own practice. In 25 consecutive cases, in all of which either aspirin or aspergum had been used, the prothrombin time was not below 80 per cent of normal in any instance, and in most cases it was between 90 and 100 per cent of normal. The tests were concluded at this point, partly because of the uniformly negative results but chiefly because of the current shortages of laboratory personnel immediately after the war. It is true that the salicylates lower the prothrombin time of the blood, but our own experience does not indicate that the use of aspirin in the quantities taken after tonsillectomy is ever likely to have this effect.

Our own feeling is that the majority of cases of post-tonsillectomy bleeding are the result of infection. We, therefore, postpone operation if there is a history of a recent infection, sore throat or cold, and we never operate if there is any temperature elevation at all. We study with particular care all patients with a history of unexplained, low-grade temperature elevation over a long period of time, as well as patients with leg, joint, and bone pains or with any other evidence of systemic infection. Patients who have had an acute infection within a month of operation always receive the same careful scrutiny.

All these patients with recent infections are studied by the sedimentation rate, which is done by the Wintrobe method, and we prefer not to operate unless the value is between 16 and 20 mm. per hour, though we are influenced by the trend of the rate as well as by the actual values if serial tests are necessary. In 38 of the 45 most recent instances of bleeding the sedimentation rates at operation were within this range or lower. In the other seven the values were from 22 to 27 mm. per hour in six cases and 35 mm. per hour in the seventh. The figures are too small to warrant conclusions, but we obviously failed to abide by our own rule in these seven cases and the infection which the elevated values indicated perhaps explained what happened.

SUMMARY

Tonsillectomy is now usually performed on restricted, rational indications. It remains to be proved whether the operation influences the development of poliomyelitis, either immediately or remotely, but it is the part of wisdom to refrain from elective surgery during any kind of epidemic.

The performance of the operation by untrained physicians and the tendency to regard it as minor surgery, which it is not, explain most of the deaths, complications and poor results.

Hemorrhage is the most frequent of these complications. It occurred primarily 82 times and secondarily 160 times in 2,739 tonsillectomies performed in private practice over a ten year period. Prophylactic measures are discussed and a simple method of controlling secondary hemorrhage, by the intramuscular injection of double-strength U.S.P. posterior pituitary extract, is presented.

It is believed that except for technical errors infection is the most reasonable explanation of all forms of post-tonsillectomy bleeding. It is doubtful that aspirin, in the quantities ordinarily used after operation, plays any role at all.

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UROLOGICAL PROBLEMS IN CHILDREN *

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Unfortunately a large percentage of the urological problems of children start off with mild or no symptoms. Their underlying cause is frequently congenital. They occur in a young age group who are somewhat insensitive to pain and unable to make the discomfort known, and the diagnosis is often made only after irreparable damage has been done. Pyuria, hematuria, or severe pain are usually late symptoms in these little patients.

Campbell, in a large series of autopsies, found that a combination of obstruction (urinary stasis) and infection constitutes over 90 per cent of the major urologic problems in infants and children. The majority of the obstructions are congenital. Since the urinary secretion begins about the fifth month, advance hydronephrosis, even with complete parenchymal destruction, may occur in the newborn. Hydronephrosis in varying degree occurred in approximately 1 in 20 cases in 15,919 autopsies. Anomalies found in the autopsies: renal hypoplasia 1:513, unilateral renal agenesis 1:610, fused supernumerary kidney 1:4000, congenital solitary renal cysts 1:1591, congenital polycystic disease 1:227, fetal lobulations which usually disappear at the age of 4 or 5 years persisted throughout life in 5 per cent, fusion of kidney usually horseshoe type 1:400, sigmoid or L-shaped kidney 1:4000, congenital ectopic kidney 1:800.

Regardless of the patient's size or age, cystoscopy with x-rays, if needed, should be performed. Ten years ago many good pediatricians maintained and most conscientious urologists admitted that the trauma of instrumentation with spread of

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infection obviated the diagnostic gains of thorough urologic studies in the positive handling of urinary problems of infancy and childhood, but the advent of antibiotic and chemotherapeutic antiseptics and the availability of improved small urological instruments leaves no curtailment in securing adequate information except ignorance of the physician or incompetence of the urologist.

Campbell has listed these indications for cystoscopy: (1) pyuria (a) acute persistent, (b) chronic; (2) disturbances of urination, enuresis, dysuria and urgency; (3) hematuria—except acute nephritis; (4) abnormal pain; (5) abnormal tumor; (6) anomaly of external genitalia (upper tract anomalies occur in one third); (7) urogenital injury; (8) hypertension; (9) renal insufficiency; (10) retarded growth; (11) spinal cord injury and disease; (12) therapy, that is, renal drainage, dilatation of ureter for stricture or to encourage the passage of a stone. In all cases in which excretory urographic study is not clearly defined cystoscopy, of course, is indicated.

Contraindications to cystoscopy are: (1) Acute urinary infection except acute, persistent pyuria; (2) marked debility, emaciation (rarely); (3) acute nonurologic illness (with rare exception); (4) ignorance or incompetence on the part of the operator (Keys). *Tender age is no contraindication to cystocopy.*

CASE REPORTS

I wish to present a few cases selected to show the importance of adequate early urologic study.

Case No. 1. M. J. P., white female, thirteen months of age, gave a history of the diapers becoming moist very quickly after changing since birth. The parents stated she had "kidney trouble" in the form of recurrent fever, pyuria, and irritability for past nine months. Examination revealed a well developed and nourished, white female not appearing acutely ill. Blood picture was normal except for a slight elevation of the white count. Urinalysis (cath.) revealed 1 to 4 pus cells H.P.F. and a few *B. coli*. Cystoscopy with x-rays under general anesthesia disclosed a hydronephrotic, infected, upper pole of the left kidney with ectopic orifice in the vagina. Under general anesthesia left hemine-phrectomy and ureterectomy were performed. The microscopic diagnosis was hydronephrosis with diffuse, chronic pyelonephritis and hypertrophy and dilatation of the ureter. Convalescence was uneventful. Repeated urinalyses have been negative.

Case No. 2. S. L. R., white female, fourteen months of age, had a persistent pyuria in spite of penicillin, terramycin, sulfa, etc. with recurrent fever, frequency, and dysuria for past two months. Examination revealed a well developed and fairly well nourished, white female not appearing acutely ill. Tests and x-rays were normal except for a slight elevation of the white counts, many pus cells (50 to 100 H.P.F.) and *B. coli* in the urine. Cystoscopy with differential renal function test and x-rays under general anesthesia showed a right hydroureter and hydronephrosis (infected). A right nephrouretectomy (with double ureters down to the ureterovesical juncture) was performed. The pathological report: "Microdilatation with thinning and fibrosis of the ureters with an active chronic granulomatous ureteritis and pyelitis. Severe hydronephrosis with renal parenchymal scarring". Convalescence was uneventful. Repeated urinalyses have been negative. The patient has a normal appearance.

Case No. 3. R. R., colored female, eight months of age, had a mass in the upper left quadrant that the mother noticed two weeks before admission to the hospital. Examination revealed a well developed and nourished colored female not appearing acutely ill. Urinalysis, blood picture, blood chemistry, and x-rays were normal except for the kidney x-rays. Cystoscopy with x-rays under general anesthesia revealed a normal left kidney, but the right pyelogram showed a deformity consistent with a tumor. Right nephrectomy under general anesthesia was performed. The tumor weighed 310 grams. Microscopic report showed it to be a Wilms tumor. The convalescence was very satisfactory. Postoperative irradiation was given. The patient is doing well six months after operation.

Case No. 4. J. B., white male, ten years of age, experienced increasing difficulty in voiding. He required a longer time than the other children and the stream lacked force. Recently he did not take as much interest in his surroundings, especially sports. The examination revealed a well developed and nourished white male not appearing acutely ill. There was a mass in the suprapubic region that persisted after voiding. A residual urine of two quarts was present. Blood chemistry showed N.P.N. 45 and creatinine 1.6, R.B.C. 4,125,000. A cystogram revealed a very large bladder with reflux up both ureters which were markedly dilated as were the pelves and calices. Cystoscopy revealed a congenital valve in the posterior urethra. Suprapubic cystostomy with removal of the valve was performed. After

prolonged suprapubic drainage, the right kidney function improved with diminution in size of the ureter, pelvis and calices; however, it was necessary to remove the left kidney. The patient's renal function remains impaired with slight elevation of the blood N.P.N. after five years. He has regained his interest in sports and maintains marked good grades in school.

Case No. 5. F. M. D., colored female had bilateral palpable masses in the kidney regions at birth. X-ray (K.U.B.) confirmed the suspicion. Blood picture and chemistry were normal. Intravenous pyelogram showed no excretion of medium. It was impossible to get retrograde pyelograms due to a congenital deformity of the bladder. A left nephrectomy was performed on the eighth day after birth for what was thought to be sarcoma of the kidney (wt. 280 grams). The convalescence was quite satisfactory. Microscopic diagnosis was polycystic kidney. Although to-date the patient appears normal clinically without any apparent increase in size of the right kidney, the prognosis is very poor.

Case No. 6. W. B., Jr., colored male, two years of age, was admitted to the hospital on account of fever, pain in the left side, and frequency of urination of two days' duration. He had the first attack of pyelonephritis at ten or eleven months of age. Since that time he had had intermittent attacks of fever and pyuria. Examination revealed a well developed and nourished colored male not appearing acutely ill. R.B.C. 3,800,000, Hematocrit 38, W.B.C. 15,300; polymorphonucleears 58; lymphocytes 42, Hb. 12. The urine was loaded with W.B.C.; occasional R.B.C.; and occasional gram positive coccus. After antibiotic treatment the urine cultures were consistently negative. K.U.B. and intravenous pyelogram revealed good function bilaterally with possible early dilatation. The renal outlines were not definite. Calculi were noted, but their relationship to the genito-urinary tract was not established. The cystogram was within normal limits. The calculus showed in the lower pelvis and not in the bladder. Cystoscopy revealed calculi in the left kidney, the lower pole of which approached the midline. The calculus in the lower tract was definitely in the ureter. The right side was within the normal limits. Impression given was a horseshoe kidney with calculus disease. Six days after admission to the hospital a calculus was passed. Five calculi were removed by operation (four from the kidney and one in the ureter). The convalescence has been uneventful.

To avoid prolongation of this discussion, case histories of congenital stricture of the ureter or urethra have been omitted. Inasmuch as these conditions constitute the most common cause of hydronephrosis and recurrent urinary tract infection their importance should be emphasized. If the obstruction is marked and dilatation has occurred, intravenous pyelo-uretero-cystogram sometimes will disclose their presence, but in doubtful cases cystoscopy with passage of ureteral catheters and x-rays is mandatory because only in this way can we prevent irreparable urinary tract damage in later life.

CONCLUSION

1. Major urological problems in children are much more frequent than one would suspect.
2. Early diagnosis and treatment are necessary to prevent irreparable damage.
3. Cystoscopy with x-rays is indicated, regardless of the age, when diagnosis is in doubt.
4. Pyuria, hematuria, or pain usually occur late in the disease.

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CLINICAL SUMMARY OF SALT AND WATER METABOLISM *

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Salt and water metabolism presents to the clinician a new type of problem in that the information gained at the bedside is often too inaccurate to use or even misleading. We are well aware that thirst need not represent a need for water and that the salt depleted human, unlike the rat, does not crave salt.

Most of our information has come from the laboratory. Initial information was based on the chloride and bicarbonate ions because of the simplicity of the determinations. It became apparent, though, that the cations, sodium and potassium, were of more primary importance. With the coming of the internal standard flame photometer, in 1946, accurate sodium and potassium determinations have become quick and simple enough to be used in the

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routine clinical laboratory.

The literature on the subject is already voluminous and often conflicting. In summarizing, I shall draw freely from the literature, and for the sake of continuity I shall take the liberty of filling in the gaps with my own experience. In this way I hope to integrate information cross-filing many diseases.

First, a brief introduction to the water in the body. (Figure 1) About 60 per

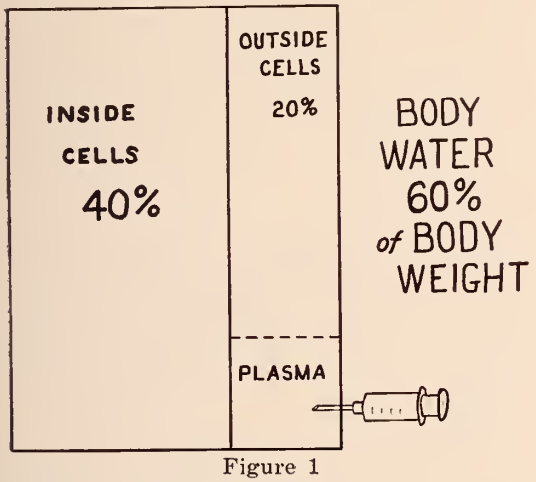


Figure 1

cent by weight of the adult human is water. About 40 per cent is inside cells and the other 20 per cent is outside cells. One fourth of the latter is plasma which serves to stir the extracellular fluid. It is readily available for analysis and has essentially the same composition as the rest of the extracellular fluid. All of this water contains salts in simple solution. That within cells is rich in potassium and that outside cells is rich in sodium.

To compare quantities of potassium and sodium it is necessary to introduce a unique unit, the milliequivalent (Figure 2). Since potassium is a larger and heavier atom than sodium, 10 milligrams of potassium does not represent the same number of atoms as 10 milligrams of sodium. A milliequivalent of potassium is 39.1 mg. and contains the same number of atoms as a milliequivalent of sodium which weighs 23 mg. The relative weights of these atoms are 39.1 and 23. Similarly, a milliequivalent of chloride is 35.5 mg.

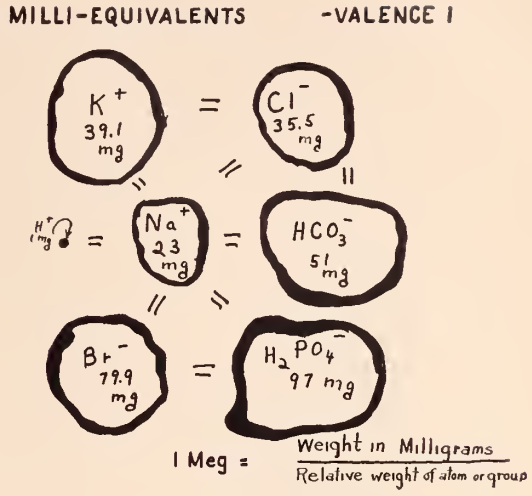


Figure 2

and of bicarbonate 61 mg. To get milliequivalents one need only divide the milligrams by the relative weight of the atom or group of atoms. This unit streamlines our bookkeeping. We can now say 1 milliequivalent of sodium combines with 1 milliequivalent of chloride or 1 of bicarbonate or replaces 1 of potassium or hydrogen.

Returning to the body water (Figure 3) we can now easily express the normal compositions of the cellular and extra-

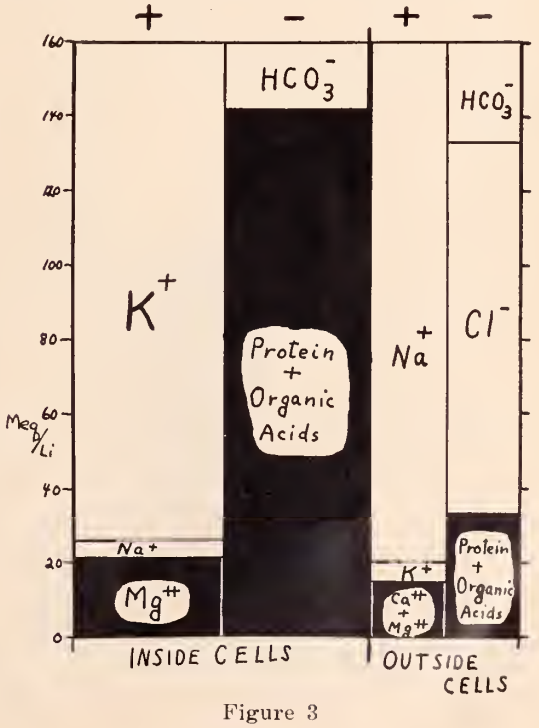


Figure 3

cellular fluids in simplified form. Note that potassium is about 30 times as concentrated inside cells as outside and the reverse is true for sodium. Note that chloride is almost all extracellular. Note that the total of positive ions must equal the negative ions. The total of the ions inside cells must equal the total of the ions outside cells because of osmotic forces. Hence, a low extracellular sodium level reflects a low intracellular potassium level. As represented, sodium is in solution as a free ion and not as sodium chloride. The sodium matching chloride is in a common pool with that matching bicarbonate. Clinically, today, we are chiefly concerned with sodium, water, and potassium.

In health the levels of salts and water are maintained largely by the kidney. The kidney has the remarkable ability to regulate its excretion to match the body intake. Salt and water enter the extracellular fluid and leave via the kidney as represented in Figure 4. The cell is bathed by the extracellular fluid and is limited to an exchange of salt and water with the extracellular fluid.

So long as the intake minus any extraneous losses remains within the kidney's ability to regulate, a normal level will exist in the extracellular fluid. When this quantity exceeds the kidney's ability to secrete, that substance accumulates in the extracellular fluid and the normal range is exceeded. Conversely, when the intake minus the extraneous losses in sweat, vomiting, diarrhea, intestinal intubation and paracenteses is below the kidney's minimum secretion, the extracellular space is depleted. With this concept therapy becomes merely adding or subtracting a salt or water to fit within the renal regulation.

We shall follow this general plan. The variables are intake, extraneous losses, and renal regulation, any of which can cause trouble. We shall deal with sodium, water, and potassium separately and express the clinical essentials of their interrelation.

Figure 5 is the general plan for sodium. The variation of the diet between the Chinese and the Eskimo readily suggests

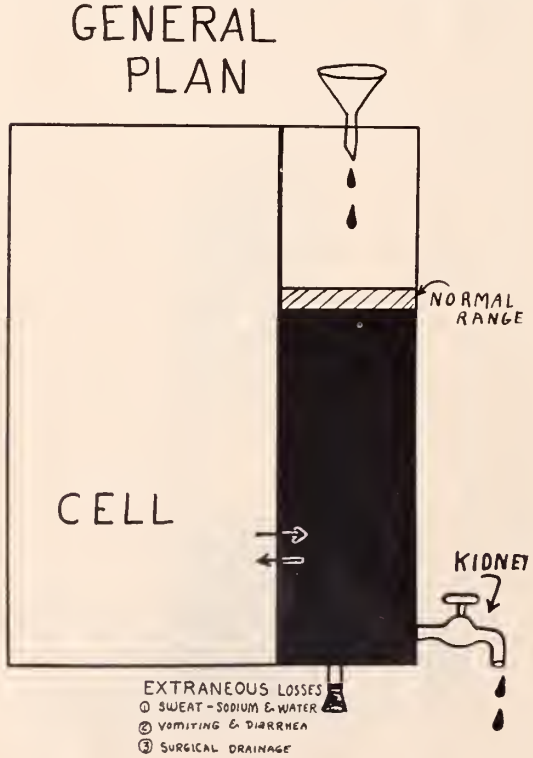


Figure 4

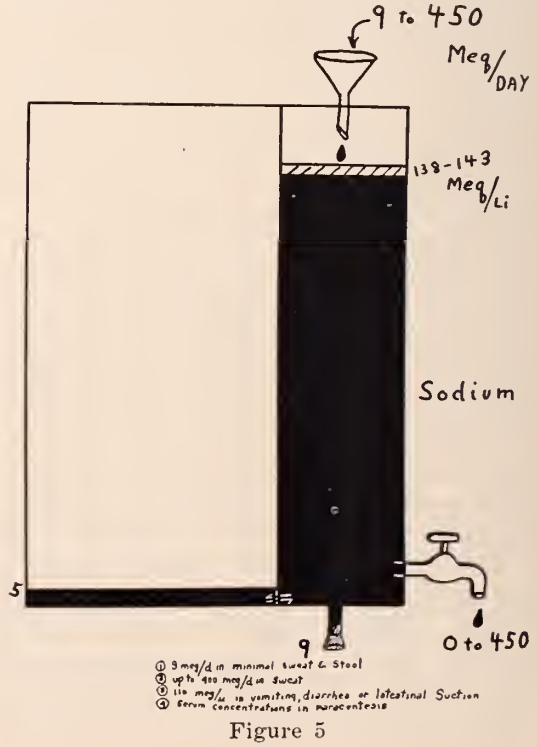


Figure 5

the wide range of renal sodium excretion. The kidney can excrete as much as 450 meq. of sodium (25 gm. of NaCl or 40 gm. of $NaHCO_3$) daily and when necessary can virtually secrete a sodium free urine. Since about 9 meq. (500 mg. NaCl) are lost in stool and minimal sweat, this becomes the lower limit of intake. (This is the 200 mg. sodium diet). Up to about 200 meq./day may be lost in severe sweating and average intestinal juices contain somewhere in the neighborhood of 100 meq./Li., whether it presents as vomiting, diarrhea, or via a Miller-Abott tube. A notable exception is the vomiting with a peptic ulcer in which hydrogen replaces sodium. Lastly, paracenteses are essentially at serum concentrations.

Should 450 meq. be exceeded, the body retains sodium. Normally, this does not happen but the experiment has been done many times. Retention usually occurs as a result of impaired renal excretion. Figure 6 is a comparison between the renal

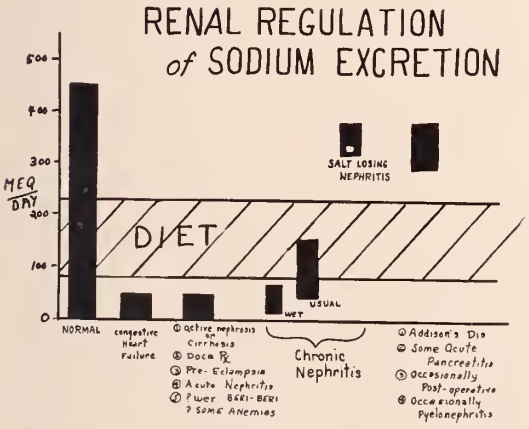


Figure 6

regulation in a hypothetical case of various diseases and a normal diet range. Note that the normal has much leeway. Note also that heart failure, pre-eclampsia, active nephrosis, acute nephritis, etc., are characterized by an impaired excretion, and that Addison's disease, some cases of acute pancreatitis, etc., by impaired conservation. A chronic nephritic may telescope his range to any level.

The excess sodium retained rarely presents as a high serum level, though this is occasionally seen in renal failure and is often referred to as "Luetscher's syndrome." Instead, as shown in Figure 7,

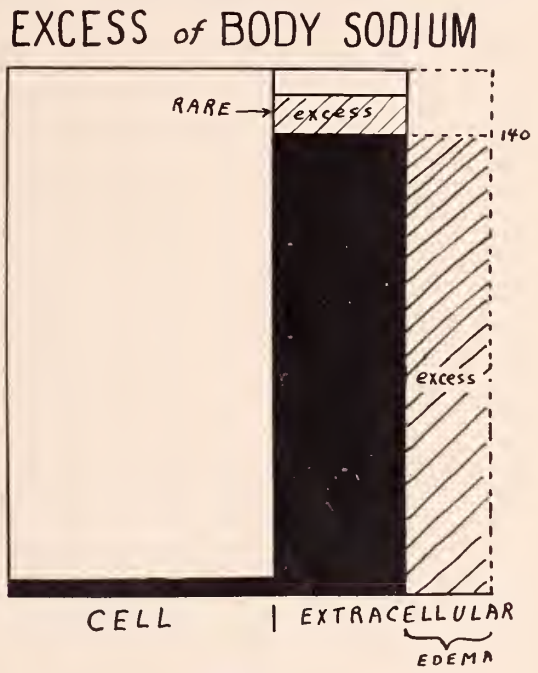


Figure 7

it usually presents as an associated excess of water or edema with no change in concentration. This is again represented in Figure 8 which is a hypothetical plot of

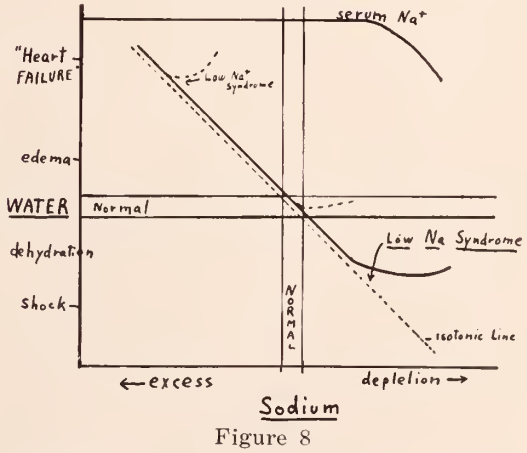


Figure 8

extracellular water against extracellular sodium. This is distinctly a renal adjustment. The "isotonic line" represents equivalent change of sodium and water giving no change in concentration. The joint rise to the left along the isotonic

line appears as edema at 2 to 3 liters and at 8 to 12 liters produces the clinical picture of "congestive heart failure" in most every detail, including venous distention, cardiac enlargement, and even a gallop rhythm. With this concept it is hard to define "congestive heart failure" as anything but this renal retention of salt and water as a result of heart disease. You will remember in Figure 6 the impairment of salt excretion in "congestive heart failure" as demonstrated by Schroeder, Futcher, and others. The clinical syndrome in retention in nephrosis and cirrhosis is different perhaps because of the lack of albumin. This would cause the plasma to be less than one-fourth of the extracellular fluid.

Sodium depletion is difficult to produce without either an extraneous loss as mentioned above or a renal failure to conserve as shown in Figure 6. Small depletions, such as occur in a rice diet for hypertension, are associated with extracellular water loss (Figure 8). But further depletion, such as in Addison's disease, heat exhaustion, or an occasional patient on a low sodium diet, is associated with a break in the renal regulation, perhaps as a result of the already lowered plasma volume. Water is no longer lost and the sodium concentration falls. The low sodium syndrome produced is characterized by weakness, thirst, lethargy, sweating, tachycardia, and often a drop in blood pressure. Renal impairment is evidenced by azotemia, hyperkalemia, further water retention, and in experimental studies, impaired renal clearances. All is quickly reversed by giving 300 to 600 meq. of sodium (2 to 4 liters of saline). This is the only instance of a low sodium syndrome that can be properly treated by isotonic saline. The kidney will retain enough sodium without water to reverse the lesion.

This same break or low sodium syndrome can occur anywhere on the curve of renal adjustment of water to salt. Perhaps this again represents a renal impairment of water excretion. A classic example is the patient in heart failure from heart disease who is treated by sodium depletion tactics. Usually this has been going on for some time and he is particularly vulnerable if he is getting mercurials, which directly impair the kidney with respect to sodium and water. The break occurs high on the curve (Fig. 8) and his weight or water actually rises. The same clinical picture appears except this patient is edematous and he may have paralytic ileus. Here giving 300 to 600 meq. of sodium in the least quantity of water (300 to 600 cc, of 5 per cent NaCl) restores the previous state. It is extremely important to restrict water lest his intake be hypotonic saline which will harm him. One must deny this thirsty patient his drinking water. The hypertonic saline should be given slowly for fear of aggravating his congestion and may be given stepwise.

A related situation may obtain nearer the normal volume in such situations as acute pancreatitis where large quantities of sodium may be lost in the urine. Similarly, and not infrequently, an identical situation occurs immediately postoperative for some unknown cause. All patients do not retain sodium postoperatively. In these two situations the patient merely becomes drowsy and listless in two to three days. His blood pressure may be low. The large sodium loss has not been announced by a loss of large volumes of water, and usually goes unnoticed. But the serum sodium is low and large quantities are present in the urine. The urine sodium concentration may even be higher than that in the serum. Indeed this must be considered a selective renal failure as azotemia is usually not present. The sodium should be replaced because the deficit causes further damage. Frequently, there is a striking clinical response, but often it is slow. Perhaps this is due to damage to other systems by whatever damaged the kidney. Daily serum and urine sodium determinations should be done. A first approximation of 300 to 500 meq. should be given and water restricted. A second

approximation may be based on the next day's serum sodium, adding in the twenty-four hour urine sodium loss. When the serum sodium reaches 135 meq./Li. one may simply replace the sodium loss as measured in the previous twenty-four hour urine. The serum potassium should also be followed. Should the serum bicarbonate fall, either sodium bicarbonate or lactate should be substituted for the chloride. Both come in ampoules containing about 45 meq. of sodium in hypertonic solution.

In cirrhosis the renal handling of salt and water is often impaired. A low serum sodium in cirrhosis probably should only be raised if it is symptomatic or if there is a serious hyperkalemia. Often following a large paracentesis on a low salt diet serious hyponatremia appears. If 10 liters is removed then 140 meq./Li. times 10 liters or 1400 meq. of sodium (80 gms. of salt) is removed. Should the water reaccumulate without sodium available in the diet, it would take the same 80 gms. of NaCl to restore his sodium concentration. It seems that the cirrhotic has an independent water retaining tendency.

Lastly, in some chronic diseases, for example, old cardiovascular accidents, the serum sodium regulates low, and in certain brain lesions, notably thalamic, it may regulate at 170 meq./Li. Each is without renal impairment.

Water has been discussed in relation to sodium but also deserves separate attention. The normal kidney can excrete over 20 liters a day such as in neurotic polydypsia or diabetes insipidus. There may be little or no sodium loss should the kidney need to conserve it. In this connection the short lived attempt to flush sodium from patients in heart failure with a large water intake yielded no increase in sodium excretion. On the other hand, the kidney requires about 600 cc. a day to excrete its solutes.

The body loses a liter a day by evaporation without noticeable sweat and makes about 300 cc. a day in burning foodstuffs —a net loss of 700 cc. This makes 700 plus 600 or 1300 cc. the minimum water requirement.

Maintenance can be had even in renal disease by giving a quantity of water equal to the previous twenty-four hour urine volume plus 700 cc. An additional increment is needed for visible sweat and any other extraneous loss should be matched. This allows 700 cc. a day for an anuric patient which is a little high.

Overhydration has been discussed with sodium retention. It occurs without further sodium retention in cirrhosis, nephrosis, the low sodium syndrome, and with pituitrin intoxication. According to present beliefs water should be restricted only in the low sodium syndrome. Nephrotics may be made sicker by water restriction.

Depletion of water without sodium occurs in thirsting and in diabetes insipidus. The treatment is obvious.

The signs of dehydration are not too accurate in the adult. Loss of skin turgor —the ability of the pinched skin to resume its shape—is not too distinct. Softening of the eyeballs may be noted. The eyes may be sunken. Weight loss is accurate but difficult to follow in a sick patient, though this can be done with a stretcher that will balance on a scale. With good kidneys the specific gravity of the urine is a good index of mild dehydration. In acute dehydration the hematocrit rises noticeably. A deficit of about 4 or more liters may produce shock. If treated quickly with saline the return of urine flow is prompt and the quantity and specific gravity of the urine may be used as an index of the state of hydration, barring previous renal disease. If the initial specific gravity is about 1.012, then there is either old or new renal damage.

Potassium, clinically, presents a different situation because it is about 90 per cent intracellular and because the kidney handles it differently (Figure 9). First, the kidney is unable to conserve potassium as well as sodium. Even in hypokalemia normal kidneys continue to excrete 8 meq./Li. in the urine. Also the maximum is not like that for sodium. With an in-

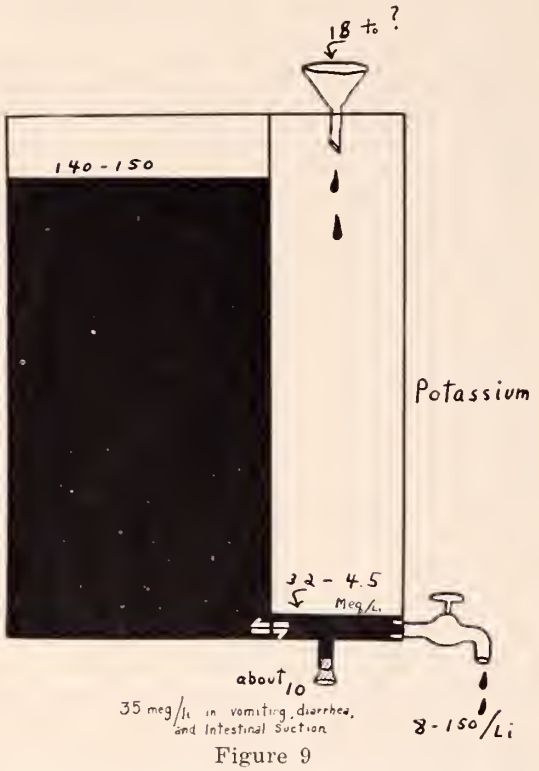


Figure 9

creasing load the urine potassium rises to about 150 meq./Li. and a diuresis occurs, allowing for the excretion of more.

A simple excess of potassium is associated with hyperkalemia, e.g., upon ingesting a large dose of potassium chloride. A simple depletion is associated with hypokalemia. This may occur in a person maintained on large quantities of intravenous glucose and saline over prolonged periods. Otherwise, there is little correlation between body potassium and serum level. Clinically, the serum level is the important consideration. The normal serum level is about 3.2 to 4.5 meq./Li., but symptoms rarely occur between 3.0 and 7.5. Clinically, hyperkalemia and hypokalemia are similar, both giving paralysis, the former muscular and the latter neuromuscular and not paralyzing the heart. The electrocardiogram in hyperkalemia generally shows high T waves and in hypokalemia low T waves. With severe hyperkalemia the QRS widens and with hypokalemia the heart becomes irritable.

Hypokalemia is body potassium depletion with one exception—a rare disease called periodic familial paralysis in which there is periodic hypokalemic paralysis from a shift of the potassium into the cells. In all instances significant hypokalemia should be treated by potassium replacement. The deficit is usually about 200 meq. It is given in solutions containing about 35 meq./Li. This must be given slowly, lest a transient hyperkalemia cause heart standstill. Also, it is wise to replace it stepwise while following the serum levels.

Hyperkalemia is essentially a renal failure though it does not occur in all cases of renal failure. With normal kidneys it occurs only when a large potassium load is placed on the kidney. A release from cells may do this. In renal failure it occurs with normal or small potassium loads. A person with chronic uremia who is reasonably comfortable may collapse from hyperkalemia after eating four oranges. It is often seen in the impaired renal function associated with a low serum sodium or dehydration or shock, even though the body may be potassium depleted too. This is often observed in the combined sodium, potassium, and water depletion of diabetic coma or severe diarrhea. Upon replacing sodium and water the serum potassium falls and may become critically low. The potassium loss should be replaced only when it becomes normal or low in the serum.

A similar picture occurs in cirrhosis with hyponatremia but it is less amenable to treatment. It occurs in critical states such as severe infections.

This renal impairment in potassium excretion may be seen in nephrosis in the absence of azotemia.

Hyperkalemia in the chronic nephritic or in the nephrotic may be treated simply by a low potassium diet analogous to the low sodium diet (Figure 10). Similarly ion exchange resins may be used. Hyperkalemia in acute renal failure is treated by a potassium free diet. In the low sodium syndrome it is treated by improving renal function with salt. Large quantities of potassium can be removed via a

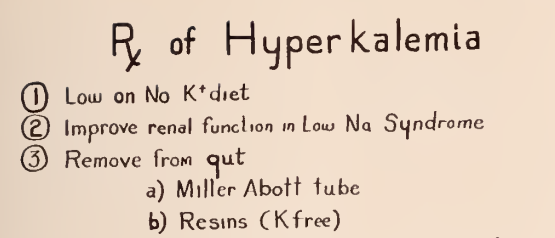


Figure 10

Miller-Abott tube if inserted while peristalsis is still present. In an emergency hypertonic saline will afford fifteen minutes grace and glucose and insulin will give a few hours.

Lastly, the artificial kidney is very effective in removing large quantities of potassium rapidly.

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MANAGEMENT OF THE DEAFENED PATIENT;

WITH SPECIAL REFERENCE TO THE ROLE OF THE GENERAL PRACTITIONER *

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At the present time deafness is solely an otologic problem. Most deafened patients who seek treatment—as a great many of them do not—go directly to the otologist. This is not a satisfactory situation. Ideally, the otologist should be a consultant and a therapist. Ideally, most deafened patients should be referred to him, for confirmation of the diagnosis and for treatment. If once that ideal could be accomplished, an enormous advance would have been made in the management of deafness.

The problem of deafness, in fact, will never be managed as it should be from the standpoint of case-finding and treatment, let alone prophylaxis, until the general practitioner assumes his full responsibility for it. With very little effort on his part he could be the richest source of case-finding which exists in any field of medicine. He could readily identify deafened patients who do not mention their own hearing loss, or who are unaware of it, by clinical observation plus a simple question in the routine of history-taking. To them and to those who call attention to their own condition he could point out the possibilities of cure in the occasional case, of improvement in many cases, and of aural rehabilitation in all cases. In the past the deafened person has been largely left to his own devices. There is no justification for that state of affairs. There is much to be done for him, and the general practitioner is the physician who can best bring that realization to him.

How many deafened and hard-of-hearing persons there are in the United States today no one really knows. Such surveys as have been made, and such statistics as are available, suggest that the number is between seven and a half and nine and a half million, and that at least one and one half million of these are children. General practitioners, because of the nature of their practice, see more patients than any other group of physicians. By the law of averages they must see many of these deafened millions, but for the most part they have not, in the past, seized the opportunities for diagnosis and guidance which their field of practice presents. This is not strange. No blame can be attached to them for their failure. There are two reasons for it. The first is that the average medical student receives almost no instruction in the recognition and management of deafness. The second is that otologists have been slow to point out to their confrères, and particularly to general practitioners, how much has been achieved recently in the alleviation of this handicap.

The purpose of this paper is to present the general facts of the present situation and to emphasize, particularly, certain extremely important facts upon which very little emphasis is usually laid.

DEFINITION AND CLASSIFICATION

For the purposes of this discussion deafness may be described as hearing which is nonfunctional for the ordinary activities of

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life. It falls into three categories, conductive deafness, nerve (sensory) deafness, and central deafness. This classification is more than academic. Each variety of deafness develops upon a different etiologic background, each requires a different therapeutic regimen, and the prognosis is different in each type.

Conductive Deafness.—In the conductive type of deafness the sensory (nerve) system of the inner ear is intact but sounds do not reach it because their passage to it is obstructed. For all practical purposes conductive deafness arises on a mechanical basis, which may take three forms:

1. The external auditory canal is plugged, often as the result of infection, and even more often by wax which is allowed to remain in place for long periods of time.
2. Movement of the eardrum is impaired.
3. Movement of the ossicles is impaired.

These three causes can be traced, in turn, to three other causes:

1. Infections of the middle ear are inadequately treated.
2. The otologist who treats pathologic processes in the eustachian tubes does not always remember that their function is to aerate the middle ear and that this function must be re-established after an illness if hearing is to be maintained.
3. Otosclerosis develops.

There is nothing to be done to prevent the third of these causes. The first and second can be prevented by a commonsense precaution, namely, a check of the auditory function after recovery from acute infections of the middle ear and acute systemic infectious diseases.

Loss of hearing is never immediately total in the conductive variety of deafness. Sounds of very high intensity cause vibrations in the skull and these vibrations continue to be transmitted to the sensory organ of the inner ear. If, however, conductive deafness continues unchecked, loss of hearing eventually becomes complete. Secondary nerve degeneration is then almost inevitable, just as muscular atrophy is inevitable if an arm or a leg is kept in a cast for an indefinite period.

The clinical manifestations of conductive deafness are characteristic. The patient, as a rule, speaks in a low voice because he hears himself by means of bone conduction and does not realize that his voice is too low for others to hear him. He is seldom disturbed by noisy surroundings. One reason is that he does not hear the noises which disturb persons with normal hearing. Another is that those who are talking to him automatically speak more loudly because of the noise of the surroundings. In a sense, therefore, his conductive hearing loss is compensated for.

From the prognostic standpoint, patients with conductive deafness can often be helped if they are treated early enough. Their disability can be arrested, improved, or circumvented by various methods. They do well with hearing aids, far better, in fact, than patients who are nerve-deaf. Finally, a selected number of patients with conductive loss of hearing caused by otosclerosis can be benefited or even cured by the fenestration operation.

Nerve Deafness.—The sensory or nerve type of deafness results from some pathologic process which affects the sensory system of the inner ear. Sounds pass normally to it, unless they are prevented from reaching it by an associated conductive deafness, but they cannot be perceived because the nerve is diseased or destroyed.

The commonest cause of nerve deafness is senescence, the simple process of growing old. Sometimes nerve deafness is congenital. Sometimes, as just intimated, it is secondary to prolonged conductive deafness. Other causes include infectious diseases, especially syphilis; various toxemias; direct or indirect trauma; prolonged work in a noisy environment; and the use of certain drugs. Quinine, given to induce labor, may be responsible for irreparable hearing loss in the child.

Streptomycin administered in large amounts over long periods of time can also cause serious loss of hearing.

In nerve deafness the loss is usually in the high tones. Consonants are not heard at all, and the deafened person must therefore depend on differences, which are usually slight, among the sounds which he does hear. Tinnitus practically always accompanies this type of deafness. It is so uniformly present, in fact, that some otologists believe that its occurrence should always be regarded as a warning that impairment of the function of the acoustic nerve is occurring. The tinnitus is high-pitched and is of the ringing or whistling variety.

Clinically the nerve-deaf patient presents a decided contrast to the patient with conductive deafness. His voice is usually loud: He adjusts it to his own lack of ability to hear, and, unconsciously, he makes the same adjustment for others that he makes for himself. If the surroundings are quiet he sometimes can hear relatively well. If they are noisy he cannot hear at all because he loses the small differences in sounds which must be perceived if one is to understand what is being said.

As might be expected, the prognosis in nerve deafness is much poorer than in conductive deafness, since nerve deafness arises from degeneration of delicate and essential elements of the sense organ or nerve. It seldom responds to medical treatment, and the nerve-deaf person uses a hearing aid much less satisfactorily than the person with conductive deafness. His rehabilitation therefore usually depends upon such nonmedical measures as lip-reading and conservation of residual hearing.

Central Deafness.—In the central type of deafness the disability arises either on a functional basis or is the result of some abnormality of the hearing centers in the brain. Both the conductive and the sensory systems of the ear itself are intact. This is a highly specialized variety of deafness, which demands highly specialized treatment, and it would not be profitable to go into it further in a general discussion such as this.

MANAGEMENT OF THE DEAFENED CHILD

The causes of deafness in childhood are much the same in all series that have been studied. About 60 per cent of the affected children are born deaf. The remaining cases are about equally divided between infections of the ear, nose and throat, toxic neuritis following scarlet fever and mumps, and meningitis. There is an uneasy feeling at the present time that the careless use of antibiotics in middle ear disease, as a substitute for myringotomy, is increasing the proportion of deafness in this category.

A rather tragic reason for deafness in childhood is the tendency of deafened adults to intermarry because their disability brings them together in social and business life. This is unfortunate. The children of such marriages are very likely to be deaf themselves. There is, of course, no ready solution for this problem, but deafened persons who plan to marry should be told bluntly that the welfare of possible offspring of the union cannot be ignored.

The clinical picture which the deafened child presents depends upon the period of life at which his disability has developed. If he was born deaf, or if he became deaf before his language patterns were set, he will be unable to talk and will be a so-called deaf-mute. If, on the other hand, his hearing loss developed after language patterns had been established to any degree, he will be able to speak but his speech will be unintelligible.

These phenomena are readily explained. The development of speech in childhood is chiefly an auditory function. The child learns to talk from building habits of listening. If his hearing is defective, he either fails to interpret correctly whatever sounds he may hear, or he learns to substitute other senses for the auditory faculty. In other words, faced with the problem of adjusting to the world in which he lives, the handicapped child

seizes upon the sensory channels that will serve him most effectively, that is, vision and touch, and makes them his primary means of establishing communication with the outer world. Sounds assume minor importance if they are heard at all. As a result, the speech faculty is completely inhibited, or is retarded and, if it develops at all, is imperfect. Even if the auditory disability occurs later in childhood, after the speech patterns have been set, degeneration of speech often follows because the ear serves as a guide to the accurate control of the speech mechanism. Exactly the same type of speech degeneration may occur in the adult whose hearing has become impaired.

The Problems of the Deafened Child.—The hard-of-hearing or deafened child presents three problems, a social problem, a psychological problem, and an economic problem.

1. The child who is hard-of-hearing cannot keep up with his class in school or with children of his own age. Typically, he is inattentive. He makes frequent requests for repetitions of spoken words. He cups his hand to his ear and cocks his head in the direction of voice or sound. He copies dictation. His response to music is indifferent. His speech is abnormal or actually defective. Because he cannot follow oral directions, he seems disobedient and he is reluctant to participate in activities which require oral communication, such as dramatics. He is constantly daydreaming.

Sooner or later the deafened child drops back in school and his associates become younger children. His whole environment is then wrong. His physical equipment and mental tastes are on one age level but his scholarship forces him into a younger group, too young to comprehend his difficulties. Younger children find it hard to understand him. They consider him stupid, even though he outstrips them physically. Their reaction to the situation is not only not to accept him but to ridicule him and ostracize him.

2. The sensitive child and the aggressive child react differently to such a situation. The sensitive child develops a mass of emotional conflicts, which ultimately result in an inferiority complex. He is bewildered, uncertain and afraid. The aggressive child, on the other hand, fights back with any means at hand. At first he is the mischief-maker and the fighter. Eventually he is the truant, the liar and the thief. In short, extreme introversion and other forms of atypical behavior frequently serve as compensations for the child who feels socially inadequate and who wishes to attract attention to himself.

3. The economic aspects of deafness in childhood are both personal and communal. The introvert is the potential dependent and pauper. The extrovert is the potential delinquent and criminal.

These eventualities, of course, lie in the future, but even in his school years the hard-of-hearing child is an economic drain upon the community. Many more deafened children than normal children are retarded in their grades, chiefly because of their inability to read. This is shown by the enormous improvement which can be accomplished by the use of a single remedial method, lip-reading. In view of the high cost of education today, it is not necessary to labor the point that the disability of the deafened child places an additional drain upon the school systems of all communities.

Diagnostic and Therapeutic Routine.—Fortunately, the day is rapidly passing when the disability of deafened children was merely accepted as beyond relief. A great deal can be done for them by modern methods of treatment, and it is worth doing. It has been shown that, except for their inability to speak, their mental capacity is quite as good as that of children who can hear. Tests based on the exercise of nonverbal intelligence leave no doubt of this intellectual equality. Even the most totally deaf child can be taught speech and lip-reading.

There is another hopeful aspect of this disability. Modern apparatus has demon-

strated that children (as well as adults) who were formerly thought to be completely deaf frequently have some residual hearing upon which to build. The principle of this apparatus, which is useful for teaching as well as for diagnosis, is that it delivers sounds of very high intensity, without distortion and without the discomfort and pain usually caused by distortion.

The redemption of deaf children depends upon their identification. In babies this is naturally more difficult than in older children or adults. The most useful methods are based on eliciting a response, the cochlear-palpebral reflex, to such stimuli as clapping the hands, blowing a whistle or ringing a bell when the child's head is turned away, or by ringing a bell or producing some other sound near his ear when he is asleep. If his hearing is normal, or if he has any functional hearing at all, he will respond to the sudden loud noise by blinking his eyes.

When the child is older and in school, the deafness is likely to be apparent from the characteristic behavior which has been described. This behavior, of course, is not always the result of an auditory disability, but it so frequently arises from it that auditory testing should be a fundamental part of the investigation into its causes.

Every child in whom hearing impairment is suspected should receive a thorough physical examination and a detailed local investigation, of which audiometric testing is an essential part. These studies, furthermore, should be carried out as soon as hearing impairment is suspected; many a loss has become irreparable because investigation into it has been delayed.

The selection of therapy depends upon the conditions found in the special case. Disease of the tonsils, adenoids, middle ears and paranasal sinuses should be treated by appropriate measures, including surgical measures when they are indicated. Recurring colds and allergic conditions should be managed according to the etiologic factor underlying them. Most nerve-deaf children have an aggravating conduction deafness superimposed upon the nerve deafness, and this factor is often greatly improved by the correction of local conditions. X-ray and radium may be used cautiously, on the proper indications.

Nonmedical measures include auditory training on the basis of whatever degree of residual hearing is present; the use of a hearing aid, which is practical even in very young children; speech training for children whose speech has been affected or seems likely to become affected; instruction in lip-reading; and psychologic, educational and vocational guidance according to the individual need. Simple expedients are often extremely effective. In the child of school age, for instance, the use of the so-called roving seat technique in the classroom often multiplies the learning ability.

The infant or the very young child demands special training, which should be instituted as soon as the disability is discovered, in order that the acoustic handicap shall not retard his mental development. It has been estimated that the average deafened child is retarded two years mentally and five years educationally. This is not usually because of lack of mental ability but because of lack of early training. The normal child receives a good deal of education, even though much of it may be intangible, and acquires a more or less satisfactory vocabulary, in the home, before he goes to school. Only in exceptional cases, when the parents have specially trained themselves to help him, does the deafened child receive such training. Yet children of 2½ or 3 years of age do well if they are placed in special nursery schools for handicapped children, where they can receive individual training. These schools retrieve for the deafened child some of the valuable early years which otherwise would be lost.

In the school, as the growing child grasps the process, understanding and correlation are sought between the object visualized, the printed word which describes it, the lip movements which the

teacher makes when she speaks the word, and the breathing and muscular movements necessary when the child tries to imitate her. It takes great patience, but eventually syllables learned in this fashion can be built into words and words can be built into sentences. Slowly and systematically a limited, and then a more elaborate, vocabulary is achieved. Eventually the deafened child often learns to talk and to read quite as well as a normal child. The process of learning is simply longer, slower and harder. Simultaneously, his mind is developed and trained as rapidly as his increasing vocabulary permits. When once the means of communication between teacher and pupil have been established, the deafened child's education proceeds parallel to that of the normal child. This is an extremely important consideration. The more normal the deafened child can be kept in all respects, the better will be his adjustment to his disability and to the world.

It is not only desirable, it is essential, that parents participate in the training of the deafened child. Very young children can be taught, and taught expertly, by parents who take the trouble to learn how to do it. Excellent training can be obtained from the correspondence courses conducted by the John Tracy Clinic in Los Angeles. These courses are invaluable in remote areas, where there are no nursery schools, and they are useful everywhere, for the relationship which they help to establish between parents and child is as desirable psychologically as is the formal training in speech which the child thus secures.

MANAGEMENT OF THE DEAFENED ADULT

The problems of the deafened and hard-of-hearing adult differ in certain respects from those of the deafened child. The speech abnormalities characteristic of deafness in childhood do not appear in the adult, whose speech patterns have long since been formed, though, as already pointed out, speech degeneration may occur when the function of the ear as a guide to accurate control of the mechanisms of speech is lost. The voice loses its cadences and becomes lifeless and monotonous. Its quality becomes rigid. Finally, control of its levels are lost and it becomes unduly loud or unduly low. The adult therefore needs training to prevent speech deterioration and requires substitute channels for the control of his voice, since the ear no longer serves as an effective monitor. Conservation of speech should be part of the training of the deafened adult, particularly when the hearing loss is of the common progressive type.

In the adult, just as in the child, loss of hearing has its social, psychologic and economic aspects:

The effect of hearing loss on the individual's recreational activities is pronounced. The average man is gregarious and is happiest when he is in a group. He craves and needs social contacts. Any impairment of hearing tends to shut him away from them. This is even truer of women than of men, who have business outlets for self-expression which the average woman does not possess. The outside contacts which she needs become closed to her because of her hearing handicap and both her emotional life and her psyche suffer as a result.

There are a number of reasons why loss of hearing eventually leads to a greater or less degree of depression. The deafened person has lost the mental stimulation that hearing provides. He has lost his sense of security, because he can no longer rely on sound as a signal of impending danger or as an indication of other events in everyday life. He feels left out of things. He no longer feels that he is a part of the changing pattern of the world about him, and he no longer feels the necessity to be part of it. He no longer feels that he has sufficient backbone to cope with life. He becomes bewildered and depressed. Depression causes him to withdraw from society, with resulting loss of productive efficiency. In some cases deafness has led to suicide. The late Dr. Walter Hughson was correct when he said that deafness has a psy-

chologic impact upon the affected individual that is even more profound than the impact of blindness.

With present-day diagnostic methods it is not difficult to identify the hard-of-hearing adult and with present-day therapy much can be done for him. Treatment is conducted on the same general principles as the treatment of children except for the special emphasis on hearing aids and the special applicability of a particular surgical technique, the fenestration operation.

Hearing Aids.—Generally speaking, better results from hearing aids are obtained by younger adults than by those in the older age group. The modern hearing aid is a precision instrument to which many of the objections once raised are no longer applicable. Its batteries are now longer-lasting. It is light in weight and relatively inconspicuous. Hearing aids, in fact, are so generally used today that they never attract a second glance.

The primary purpose of a hearing aid is to raise the intensity of a sound loud enough for it to be heard, and to be heard without discomfort. Since speech is the sound the deafened person is most interested in, the aid must be selected, fitted and adjusted to deliver speech as naturally as possible.

The amplification which modern hearing aids provide is adequate, and the quality of the sound which they deliver is steadily improving. The same instrument, however, is not universally satisfactory. Because hearing losses differ in kind and degree, deafened persons differ in the loudness and quality of the sounds which they can tolerate. A person who secures a hearing aid must therefore, in a sense, shop around for it. He must test various models until he locates the one which does the most for his hearing. He requires the help of trained personnel during this period. Mail-order, over-the-counter methods of selection can result only in dissatisfaction. A hearing aid is a complicated and delicate instrument, and all features of its selection and fitting require expert training and considerable experience. This includes the fitting of the ear mold, which is a vital part of the equipment. Also, after the aid has been selected and fitted, a period of auditory training is necessary in its use, in the discrimination of the sounds which make up speech, and in the correlation of the use of the aid with lip-reading.

Otosclerosis and the Fenestration Operation.—Although the fenestration operation is applicable only in otosclerosis, and only to a certain proportion of persons with that disease, it is still the most dramatic advance in the treatment of loss of hearing which has occurred in the last hundred years.

Otosclerosis develops on a mechanical basis: The bony capsule surrounding the inner ear is normally the hardest bone in in the body. In this disease it is replaced by a softer kind of bone, which grows steadily and profusely. The commonest site af the new bone growth is the region surrounding the oval window. In some 90 per cent of the cases in which this happens there is no disturbance of hearing. In the remaining 10 per cent, because fixation of the stapes occurs, hearing is affected. When the footplate of the stapes is firmly fixed in the oval window, it can no longer move freely and the vibrations carried to it from the eardrum through the malleus and incus are no longer effectively transmitted to the fluid of the inner ear. The effect is much like that of some forms of arthritis, in which the movements of the fingers, the knees or the spine become limited. Otosclerosis and arthritis, in fact, have a number of points in common. The resulting hearing loss is a conduction type of deafness, although the disease, in addition, may involve the cochlea and cause degeneration of some of the sensory cells. If the hearing loss persists, nerve degeneration almost invariably follows.

Clinical otosclerosis takes the form of chronic progressive deafness for which there is no demonstrable cause; the eardrum and all other parts of the aural

apparatus are apparently normal. Otosclerosis is frequently hereditary. It is predominantly a disease of youth and young adult life, which differentiates it from most other forms of acquired deafness. There is usually a considerable amount of associated tinnitus. All of these points, together with its progressive character, make otosclerotic deafness fairly simple to diagnose.

Statistics suggest that this variety of deafness occurs in 1 of every 8 deafened women and in 1 of every 15 deafened men. If they are correct, this disease must affect perhaps a million persons in the United States today. It was formerly considered hopeless. Now the delicate technique of the fenestration operation offers a real chance of improvement and even of cure to the limited group of carefully selected persons for whom its use is justified. The identification of this admittedly small group is one more reason why all deafened persons should be examined as soon as their auditory disability is discovered.

SUMMARY

In recent years the lot of the deafened person has ceased to be regarded as hopeless. Diagnosis has improved, and so have methods of therapy and rehabilitation. This is true at all periods of life, from infancy to old age. The general facts of the situation and the new diagnostic and therapeutic possibilities warrant a new outlook. The general practitioner has an important role to play in the accomplishment of these new objectives. He is our richest source of case-finding, and the lot of the deafened population will be improved and alleviated when once that source is properly tapped.

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RAUWOLFIA AND AMPHETAMINE THERAPY IN THE TREATMENT OF PSYCHOSOMATIC COMPLAINTS

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The rising tide of mental and nervous disorders is a matter of great concern to every practicing physician. We are all too aware of the truth of the observation of Brill [1] that emotional factors, in one form or another, are dominant findings in three-fourths of our patients. Probably about 10 per cent of these patients will develop definite mental illness, and 5 per cent may ultimately be admitted to a mental hospital, but in the remaining 90 per cent simple office management is needed. Informal psychotherapy, as practiced (knowingly or unknowingly) by every successful physician, will accomplish much in these cases. But skillful use of the proper drug therapy will be of enormous benefit in a high percentage of patients with psychogenic complaints.

Amphetamine sulphate has long been used for its mood-ameliorating action, its antidepressant action, and its ability to restore mental alertness and to dispel psychogenic fatigue. Unfortunately, the drug also produces uncomfortable side reactions, including wakefulness, tremor, and a sensation of cardiac pounding. As a result it has become almost customary to combine barbiturates with sympathetic-comimetic drugs in order to reduce the side reactions. This is usually effective, but is open to the many objections that surround the habitual use of barbiturates in any long term therapy, particularly in a group of patients who may be especially prone to habituation.

Among the newer mood-ameliorating drugs that have recently been made available, Rauwolfia serpentina holds out the greatest promise. While this drug has been most used in this country for the treatment of hypertension, it also has the virtue of having a characteristic "tranquilizing" and mood-ameliorating action. Thus Wilkins and Judson,[2] who were among the first investigators to report on the use of the drug in this country, described its mild sedative action, its ability to decrease irritibility and to improve the personality, and characterized these symptomatic benefits as the most easily identifiable effects of the drug. Ford and Moyer [3] also described the sedative action of the drug and its superiority to pheno-

TABLE 1

PATIENT	AGE	SEX	PRESENTING SYMPTOMS	RAUWIDRINE DOSAGE	LENGTH OF THERAPY WEEKS	RESULTS	SIDE EFFECTS
1. SR	44	F	Chronic headache, obesity, climacteric	1 tab. t. i. d., a. e.	9	Headaches relieved. Weight reduced 2 Lbs. per week. Nervousness, flushes, and depression relieved.	None
2. MP	43	F	Climacteric, obesity, depression	1 tab. t. i. d. ½ hr. a. e.	7	Flushes eliminated. Weight reduced 2 Lbs. per week. Depression ameliorated.	None
3. YG	24	F	Depression and crying spells	1 tab. t. i. d., p. e.	6	Depression relieved—mood elevated. Increased appetite and activity.	Wt. gain
4 FG	46	M	Marked obesity, climacteric, Paget's disease of leg	1 tab. t. i. d. ½ hr. a. e.	5	Weight reduced 20 Lbs. in four weeks. Mood elevated and nervous tension relieved.	None
5. EB	62	F	Tension headaches, depression	1 tab. t. i. d. ½ hr. a. e.	8	Headaches relieved and mood elevated. Weight loss of 20 lbs.	None
6. AM	31	M	Depression, abdominal discomfort following overeating when nervous	1 tab. t. i. d. ½ hr. a. e.	3	Mood elevated, abdominal discomfort relieved. Weight reduced by 12 Lbs.	None
7. JD	16	F	Extreme nervousuess, insecurity, obesity, depression	1 tab. t. i. d. ½ hr. a. e.	7	Nervousness and depression relieved. Better personality evolved. Weight reduced 35 Lbs.	None
8. AC	38	F	Marked obesity, depression, tension, headaches, dysmenorrhea, irregular menstrual cycles	1 tab. t. i. d. ½ hr. a. e. (+ other medication)	7	Weight reduced 45 Lbs. Mood elevated and headaches relieved. Menstrual cycle more regular and dysmenorrhea markedly decreased.	None
9. AS	49	F	Obesity, depression, low backache	1 tab. t. i. d. ½ hr. a. e.	8	Weight reduced 25 Lbs. Mood elevated, backache eliminated.	None
10. CT	34	F	Depressiou, obesity, irregular menses (scanty)	1 tab. t. i. d. ½ hr. a. e.	10	Mood greatly elevated. Weight reduced 30 Lbs. Menses regulated.	None
11. EP	59	F	Marked obesity, depression, tension headaches	1 tab. t. i. d., a. e.	8	Weight reduced 15 Lbs. Depression relieved. Complete relief of tension headaches.	None
12. ALT	54	F	Depression, tension headaches, erying spells, irritability, anorexia, inconstant back pains and abdominal cramps	1 tab. t. i. d., p. e.	11	Mood elevated. Tension headaches relieved. Crying and irritability eliminated. Increased appetite.	Wt. gain
13. AC	21	F	Obesity, depression, irritability	1 tab. t. i. d. ½ hr. a. e.	8	Weight reduced 24 Lbs. Mood elevated. Activity increased, irritability lessened.	None
14. YD	19	F	Obesity, depression, irritability	1 tah. t. i. d. ½ hr. a. e.	6	Weight redueed 15 Lbs. Mood elevated. Depression relieved. Better personality evolved.	None
15. YT	24	F	Obesity, irregular menses, irritability and depression.	1 tab. t. i. d. ½ hr. a. e.	4	Weight decreased 12 Lbs. Irritability and depression lessened.	None
16. KP	19	F	Marked obesity, moodiness and depression	2 tabs. t. i. d. ½ hr. a. e.	5	Weight decreased 20 Lbs. Personality improved. Depression and crying relieved.	None
17. WC	38	M	Obesity, moodiuess, depression	1 tab. t. i. d., a. e.	5	Weight reduced 18 Lbs. Mood elevated. Depression lessened.	None
18. WV	14	M	Marked obesity, apathy, moodiness	1 tab. t. i. d., a. e.	4	Weight reduced 20 Lbs. Mood elevated. Personality improved. Activity increased.	None
19. RLH	56	F	Obesity, depression, irritability, weakness	1 tab. t. i. d., a. e. (+ other drugs)	4	Weight decreased 10 Lbs. Mood elevated. Depression and irritability lessened.	None
20. SC	69	F	Depression, obesity and vague abdominal cramps	1 tab. t. i. d. ½ hr. a. e.	5	Weight decreased 15 Lbs. Mood elevated. Abdominal discomfort eliminated.	None
21. AD	50	M	Obesity, irritability, abdominal cramps	1 tab. t. i. d. ½ hr. a. e.	3	Weight reduced 10 Lbs. Mood elevated. Abdominal cramps eliminated.	None
22. LC	12	F	Obesity, moodiness, irritability	1 tab. t. i. d. ½ hr. a. e. (+ thyroid)	9	Weight decreased 15 Lhs. Mood elevated. Irritability relieved.	None
23. BSC	8	F	Obesity, irritability	1 tab. t. i. d., a. e. (+ thyroid)	10	Weight reduced 15 Lbs. Irritability relieved.	None
24. MK	72	F	Arthritis, depression	1 tab. t. i. d. ½ hr. a. e.	11	Weight decreased 30 Lbs. Mood elevated. Arthritic coudition improved.	None
25 DC	42	F	Obesity, depression, irritability	1 tab. t. i. d. ½ hr. a. e.	8	Weight reduced 22 Lbs. Mood elevated, irritability lessened	None

barbital in its ability to decrease anxiety and improve the sense of well being, yet with very little soporific effect. Extracts of Rauwolfia serpentina produce a mild sedation, mild bradycardia, moderate fall in elevated blood pressure, and a pronounced sense of well being. Furthermore, the hypotensive action is negligible in normotensive patients, whereas the other desirable reactions are maintained.

Thus it seems logical to combine amphetamine and Rauwolfia, and such a combination has recently become available. This is a preliminary report of the use of Rauwidrine,* each tablet of which contains 5 mg. of amphetamine and 1 mg. of Rauwiloid * (Rauwolfia alkaloids), in patients with a variety of functional complaints, as well as organic complaints. Data on 25 representative patients are tabulated here, (Table 1) and demonstrate that results have been most gratifying.

DISCUSSION

The 25 patients included in the present series are fairly representative of those seen daily by the general practitioner. In most of these patients, obesity was a clinical problem accompanying the psychological distress. Hamburger [4] has stressed the high incidence of obesity, which is largely psychogenic in nature and a symptom of underlying emotional illness, especially hysteria and depression. Walker [5] has pointed out that in view of the various neuroses reported to precede, accompany, and result from obesity, one might suspect that in some cases the psychological factors may be the common etiologic mechanisms.

From the clinical results given in the preceding table, it can be seen that Rauwidrine therapy has proved eminently satisfactory for these patients, and served to interrupt the cause-symptom cycle of obesity and emotional distress. The combination of Rauwolfia and amphetamine effected a definite improvement in mood, with relief of symptoms, and a reduction of appetite, with subsequent loss of weight. In only 2 patients (numbers 3 and 12) were any side effects noted. These reported a gain in weight, but it should be noted that obesity was not a presenting symptom in these cases.

CONCLUSIONS

1. A combination of amphetamine and Rauwolfia serpentina has proved very effective therapy for mood elevation and appetite suppression.

2. The mildly sedative and bradycardiac action of the Rauwolfia was instrumental in minimizing side actions from amphetamine.

3. The use of this combination minimizes the necessity for additional barbiturate therapy.

4. The therapy is particularly useful in patients with vague depressions and anxieties, and is worthy of more extended trial in such cases.

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* Riker Laboratories, Inc., Los Angeles, California.

SULFONAMIDE AND ANTIBIOTIC SENSITIVITY OF DYSENTERY BACILLI ISOLATED IN THE UNITED STATES, JAPAN, AND KOREA: A COMPARATIVE STUDY

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Most strains of dysentery bacilli were apparently sensitive to sulfonamide drugs when they were introduced to the medical profession around 1940. Sulfonamide-resistant † dysentery bacilli were clini-

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† This term is used to designate resistant strain to "effective" sulfonamides such as sulfadiazine, sulfathiazole etc.

cally observed in 1946, and started to increase in number in 1948 [1] and reached a high percentage of 80 to 90 of all the strains isolated in the Tokyo area in 1950.[2]

Zimmerman et al [3] also report ineffectiveness of sulfonamide drugs in Korea in the treatment of bacillary dysentery due to the prevalence of drug-resistant strains.

This problem has not been acute in the United States because several antibiotics replaced these chemicals. However, it appeared interesting to make a comparative sensitivity study of dysentery bacilli isolated from three different parts of the world to see the attitude of these organisms to these therapeutics under different circumstances.

MATERIALS AND METHODS

U. S. strains

Twenty strains of *Shigella flexneri* type 2a were selected for the study because this type of strain is most prevalent in the U. S. for a long time since the discovery of dysentery bacilli in this country,[4] and also, because this type might have had the most chance to come into contact with sulfonamide drugs and antibiotics by chance either when they were actually causing clinical dysentery or were carried by the people showing no signs of dysentery but some other illness in which these drugs were indicated. Twelve strains were isolated in 1952, and 8 strains were isolated in 1953. One strain each of *Shigella flexneri* type 1b and 2b which were isolated before 1952 were later added to the study.‡

Japanese strains

Twenty-eight strains, isolated mostly in this hospital in 1954, were subjected for the study; they consisted of 1 strain of Group A2, 1 of flexneri type 1a, 10 of flexneri type 2a, 10 of flexneri 2b, 1 of flexneri 3a, 3 of flex. Var. X, 1 of *Sh. sonnei* and one which was agglutinated by group B polyvalent serum.**

Korean strains

Eleven strains isolated in 1954 were studied. They were 1 strain each of flex. 1a, 2a and 2b, 2 strains of flex. 3, 2 strains of flex. 4a, 3 strains of flex. 5, and 1 of flex. 6.***

METHODS

The test tube method previously described was used in the assay of sulfadiazine and antibiotic sensitivity determinations. The pH of the semisynthetic medium for sulfadiazine was adjusted to 7.2 and concentrations of the drug were 0.25, 2.5 and 25 mg. per cent (10^{-5}, 10^{-4}, and 10^{-3} Mol, respectively). The results were read at twenty-four hours instead of one week as previously described.[1]

Ordinary broth, containing 1 per cent each of peptone and meat extract and 0.1 per cent of NaCl, at pH of 7.2, was used in the assay of 5 antibiotics and the incubation period was one day for all the antibiotics. Diluted broth (Broth B in the previous paper) was not used in the assay of streptomycin in the present investigation in order to make the experimental conditions equal and also because the results obtained with diluted broth did not comply with clinical observations of the use of antibiotics in bacillary dysentery.

Crystalline and standardized antibiotics were used in the present study and this resulted in the generally lower minimum growth inhibiting concentrations of antibiotics than in the previous investigation.[2]

RESULTS

Tables 1 and 2 show the minimal growth inhibiting concentrations of sulfadiazine and antibiotics, respectively. Bacilli growing at sulfadiazine concentration of 25 mg. % were arbitrarily classified as sulfonamide-resistant. It was then revealed that only 1 out of 14 strains isolated in and before 1952 in the U. S. was resistant, whereas 6 out of 8 strains isolated in 1953 were resistant indicating a statistically significant difference.

About 80 per cent of Japanese strains

‡ All these strains were kindly supplied by Dr. W. H. Ewing of the C.D.C., Atlanta, Georgia.

** Kindly supplied by Dr. N. Kasai.

*** Kindly supplied by Dr. W. C. Eveland of the 406th Medical General Laboratory, U.S. Armed Forces in Tokyo.

TABLE 1.
MINIMAL GROWTH-INHIBITING CONCENTRATION OF SULFADIAZINE

SULFADIAZINE CONCENTRATION		MG PER CENT 0.25	2.5	25	OVER 25	TOTAL
Country	*Year*					
U.S.	1952	10	1	2	1	14
	1953	1	1	0	6	8
Japan	1954	0	5	0	23	28
Korea	1954	4	1	0	6	11

TABLE 2.
MINIMAL GROWTH-INHIBITING CONCENTRATION OF ANTIBIOTICS IN MCG/ML.

COUNTRY	U.S. STRAINS						JAPANESE STRAINS						
CONCENTRATION	1.0	2.5	5.0	10	Mean	Total	1.0	2.5	5.0	10	100	Mean	Total
Streptomycin			13	9	7.0	22			0	27	1	10 *	28
Chloramphenicol	19	3			1.2	22	11	16	1			2.0	28
Terramycin	6	16			1.9	22	1	24	3			2.7	28
Aureomycin	6	16			1.9	22	0	10	16	1		4.1	28
Achromycin	1	21			2.4	22	0	15	13			3.7	28

* The strain growing at 100 mcg/ml was arbitrarily omitted from calculation to give a general conception.

were sulfonamide-resistant conforming with results of other workers in Japan, and more than half of the Korean strains were resistant.

Dysentery bacilli isolated in both the U. S. and Japan were, in general, still sensitive to five antibiotics of streptomycin, chloramphenicol, oxytetracyclin, chlortetracyclin and tetracyclin.

There was a single strain of *Sh. flex.* type 2b which was highly resistant to streptomycin. This strain was equally sensitive to other four antibiotics as other streptomycin-sensitive strains. Such a highly oxytetracyclin-resistant strain of dysentery bacilli reported from this hospital last year [5] was not recovered in the present study.

The minor difference in the sensitivity to antibiotics of Japanese and U. S. strains is not considered significant because the former consisted of several heterogenous subtypes of dysentery bacilli, whereas the latter consisted of homogenous *Sh. flex.* type 2 strains and also because the difference in the mean value of the minimal growth inhibiting concentrations was considered to be within the range of technical error.

DISCUSSION

It was interesting to see a sharp rise in the percentage of sulfadiazine-resistant dysentery bacilli in the U. S. where antibiotics have been in general use since 1945 to 1948. It is unlikely that sulfonamide drugs were abused by laymen in the treatment and/or prevention of dysentery and other diseases because regulations are strict for the sale of these drugs and the people in general can not get them without the prescription of the doctors. This type of sharp rise was observed around 1948 in Japan. This delay of five years may be due to a more appropriate use of sulfonamides in the U. S. or to less frequent man to man passage of the bacilli.

Four to eight years had passed before the present strains were isolated since the antibiotics have become available for medical use in the U. S., but none of the 22 strains tested showed any increase in resistance to the antibiotics. This was the same with the strains isolated in Japan where antibiotics have been used for these four years, except a few occasional strains which were highly antibiotic-resistant. This exception may be due to a much higher incidence of bacillary dysentery in Japan resulting in more frequent passage of the bacilli through human intestines.

SUMMARY

1. Sulfonamide-resistance of *Sh. flexneri* type 2a strains which are most prevalent in the U. S. abruptly rose in 1953.

2. About 80 per cent of Japanese and 50 per cent of Korean strains isolated in

1954, were sulfonamide-resistant.

3. Nearly all of the U. S. and Japanese strains were sensitive to five antibiotics (streptomycin, chloramphenicol, oxytetracyclin, chlortetracyclin and tetracyclin) like the strains isolated before the antibiotics were introduced for medical use.

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CAUSES OF DEFECTIVE SPEECH IN CHILDREN: ANALYSIS OF 140 CASES

JEANNETTE K. LAGUAITE, Ph.D.*
NEW ORLEANS

Speech and language are the tools whereby man manipulates his environment. His needs and desires are expressed through speech. By means of communication he learns and develops. Language is the outward and concrete form of symbolization and abstraction, and as such, is closely related to intelligence.

For that reason parents are usually very concerned when their children do not begin to talk as soon as they think they should. Many seek help with the idea that if the child could only talk he would be all right. Actually, the situation is just the reverse. If the child were normal, he *would* talk. Hearing loss, mental retardation, or other handicaps are often not recognized until the parents begin to inquire about a child's lack of proper speech development. Therefore, doctors, or other persons consulted about a speech problem in a young child should not delay diagnosis by telling the parents that the child will "outgrow it."

An analysis of 140 cases seen in the Speech and Hearing Center at Tulane Medical School during a two-year period (March 1952 - March 1954) presents some interesting data on the etiology of atypical speech development.

The cases have been divided into two groups: (1) those who were not able to communicate at all by means of speech or could say only one or two words, such as "mama", "bye-bye", which was not commensurate with their chronological age level, and (2) those with some language development but whose speech was characterized by so many omissions, substitutions, and distortions of sounds as to be almost entirely unintelligible. These latter cases have been put in the data under the heading "defective" speech. Children who had simply one or two defective sounds, who stuttered, or who had defective speech due to cleft palate, cerebral palsy, or other obvious physical defect have not been included in the study.

The term "functional articulation" is applied to those cases in which no pathology can be demonstrated, but, according to Johnson et al,[1] " . . . seem to be traceable to no other cause than a simple failure to learn the correct patterns of normal speech."

Examination of these children included the following procedures and, in many cases, extended over several interviews.

1. *Case history.* A thorough case history was taken to elicit information relative to the prenatal health of the mother, the birth and neonatal health of the child and his subsequent development. Such facts as age of sitting alone, walking alone, history of illnesses, age of toilet training, etc., are all important factors in evaluating the general growth and development of the child physically and emotionally. The social history is important in bringing out any emotional maladjustment which may be operating in the case.

2. *Audiometric examination.* The elaborateness of this examination depends upon the age of the child, his ability to understand directions, his co-operativeness and his general response to sounds in the environment. It may involve the use of noise-makers, music, speech tests, puretones, all of which are of controlled intensities and frequencies, and which are presented to the child in sound-treated rooms. They may be delivered through a

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loud-speaker or through individual earphones.

3. *Ear, nose, and throat examination.* In the event the child has a hearing loss, particularly of the conductive type, the etiology can usually be established by a thorough otolaryngological examination.

4. *Psychological tests.* The children are usually given certain screening tests to determine approximate level of functioning. If it seems necessary, then complete psychometric tests are administered.

5. *Neurological examination.* If from the birth history or other information and from observation the child seems to have some neurological involvement, then he is referred for a neurological examination and an electroencephalogram if necessary. Some children are also referred for psychiatric evaluation if the case seems to warrant further exploration in that field.

6. *Pediatric examination.* Since many of our cases are referred from pediatricians, it is not routine for them to be reexamined. However, some cases who did not come from pediatricians are sent for a pediatric examination.

7. *Careful clinical observation.* This last procedure is perhaps one of the most valuable indicators of the child's functioning. His reaction to the test situation, his reaction to his parents and to strangers, his approach to the tasks demanded of him, his performance of those tasks, all contribute to the qualitative evaluation of the child as a whole. This observation may be extended over a period of several visits.

Table 1 shows the ages at which the children were first seen. The median age at which the children were brought to the Center falls in the 4-4½ age group for the children with no speech and in the 5½-6 age group for those with defective speech.

Table 2 shows the etiology of the cases. Those included in the group marked "overlapping etiology" are those in which it was impossible to tell which was the most important factor operating when there was more than one, such as mental retardation and hearing loss, or hearing loss and emotional disturbance.

TABLE 1.
AGE AT WHICH CHILDREN WERE FIRST SEEN

AGE	NO SPEECH	DEFECTIVE SPEECH
1-1½	2	
1½-2	2	
2-2½	7	
2½-3	7	1
3-3½	5	1
3½-4	3	5
4-4½	4	2
4½-5	3	12
5-5½	5	12
5½-6	6	13
6-6½	5	11
6½-7	3	6
7- 8	1	4
8- 9	2	3
9-10	1	3
10-Over	3	8
Total	59	81

In those cases which were undiagnosed, it was usually because the parents did not follow up and bring the child in for a sufficient number of examinations in order to get all the information necessary to arrive at a definite diagnosis.

CONCLUSIONS

1. Children with no speech at all were brought to the Center at a much earlier age than those who had developed some speech.

TABLE 2.
ETIOLOGY OF CASES

ETIOLOGY	NO SPEECH		DEFECTIVE SPEECH	
	No.	%	No.	%
Hearing loss	23	38.9	15	18.5
Mentally retarded	24	40.6	23	28.3
(With brain damage	19	32.2	14	17.2
(Without brain dam.	5	8.4	9	11.1
Emotionally disturbed	12	20.3	10	12.3
Aphasic	1	1.6	1	1.2
Functional articulatory difficulty	0	0	38	46.9
Undiagnosed	7	11.8	1	1.2
Brain damage without retardation	1	1.6	1	1.2
	68	114.8	89	109.6
Overlapping etiology	9	15.0	8	9.8
	59		81	

2. School entrance served as a stimulus to many parents to seek help for children who still had defective speech by the age of 4½. Fifty-nine per cent were brought in between the ages of 4½ and 6½.

3. Children who did not develop speech because of severe hearing loss were recognized by parents at an earlier age than the others. Forty per cent were brought in by age 3½. (2 were recognized as early as 12 months.)

4. Slightly less than half, 46.9 per cent, of all cases of defective speech were diagnosed as functional.

5. In the order of frequency of occurrence, mental retardation, 40 per cent, hearing loss, 39 per cent, and emotional disturbance, 20 per cent, were the three primary etiologies responsible for lack of development of speech.

6. In the order of frequency of occurrence, functional articulatory difficulty, 47 per cent, mental retardation, 28 per cent, hearing loss, 18 per cent, and emotional disturbance, 12 per cent, were the four primary etiologies responsible for poor speech development in children.

DISCUSSION

The statistics in the above study represent the number of cases from an unselected population. For many of the children, it was the first time any one had been consulted about the speech problem. In such an area as this, the percentages shown vary widely from those shown by other workers. For example, Myklebust,[2] at the Children's Hearing and Aphasia Clinic at Northwestern University, gives quite different percentages. However, many of the mentally retarded and deaf children are screened out so that his figures show a more selected sample with respect to aphasics and emotionally disturbed children. It is also possible that a larger sample would show different trends.

Of the 4 causes of defective or non-speech development, only that of functional articulation may be considered as non-pathological. In less than one-half of the 81 cases of defective speech and in none of the 59 cases of no speech would the child be expected to overcome his speech handicap without some special therapy. It is most essential that children be seen as early as possible and be diagnosed correctly so that they may receive the full benefit of proper educational placement and training.

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THE INCREASING RESPONSIBILITIES OF THE LOUISIANA STATE MEDICAL SOCIETY

Responsibilities of organized medicine have increased in the past decade to the point that the individual physician is called upon to contribute more in time and in financial support. Such is needed to promote professional advancement and to improve the position doctors hold today. Were such efforts not continuous, there is grave danger of general deterioration of our position, of State medicine becoming dominant, and of loss of our independence.

In Louisiana, the collective efforts of the leaders in organized medicine in the past have been most successful, and we have an obligation to them and to ourselves to continue and to carry the torch. It is with pardonable pride and general satisfaction that the doctor in this State can enjoy favorable conditions of practice. Cults and quacks do not have the sanction of law, and we have minimal legal incumberances. The doctor is esteemed in the community for what he is and for his contribution to the community health. It seems fair to estimate that the position of the doctor in Louisiana is one of the most favorable in the whole nation.

While our position is fortunate, it is maintained with increasing difficulty and expense. The individual physician has need to be informed of the many ways in which the impact of social pressures on medicine is important, and needs further to be directed as to how he can contribute to the improvement of medicine's public relations in his own office.

Recently, a plan for meeting our increasing responsibilities was considered by a special committee appointed by our president, Dr. Walter Moss. This was done at the direction of the Executive Committee. After much discussion, and in conference with the Committees on Public Policy and Legislation and on Medical Service and Public Relations, it was proposed that the Society raise dues to $50 a year and employ a fulltime lay executive assistant to the Secretary of the Society, who would meet various organization needs and among other activities would serve as a publicity agent. It was thought by such means that valuable aid would be given in coordinating the activities of the local societies, and also, in explaining our position to the public.

The many duties of the office of Secretary, as we know, are being admirably discharged, but the volume of work in this office requires daily direction. The important function of the assistant would be contact with local societies.

It is also proposed that the Society con-

sider allocating a portion of the increase in dues to a domicile fund for the Society. It is felt that by the time that such a fund would become adequate the organizational activities of the Society will require considerably increased space. It is to be expected that some members feel that the two Committees referred to above already have funds allotted and are functioning effectively. The opinion of those in the conference, with which opinion many agree, was that this is true and it would be sad for the membership if it had not been true. Now that our needs have increased the only adequate way to meet responsibilities is to campaign all the year round. This can only be done with additional funds.

It is hoped that these proposals and plans will receive thorough discussion and consideration in the local societies, and that when the House of Delegates meets provision can be made to meet our greatly increased need for organizational activity.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

MEDICAL EDUCATION AND LICENSURE

C. Grenes Cole, M. D.

On my visit to the recent meeting of the American Congress on Medical Education and Licensure held at the Palmer House, Chicago, February 5-8, I was pleased to see that the meeting was so well attended. Many subjects were presented of vital interest to medical men interested in teaching and to other physicians whose responsibility is, to secure only well qualified doctors, for the purpose of teaching, and for the care of the unfortunate people of our state so badly in need of good medical services.

At this meeting the following subjects of interest to the medical profession were discussed,— a uniform Medical Practice Act, television as applied to postgraduate medical education, the status of the future internship, legal medicine in undergraduate education, and the position and the use of the foreign-trained doctors in our respective medical programs.

This four-day meeting was sponsored by the American Medical Association Council on Medical Education and Hospitals, the Federation of State Medical Boards of the U. S., and the Advisory Board for Medical Specialties, and attended by about 700 medical educators, practicing physicians, State Medical Society secretaries, and members of State Medical Boards and Specialty Boards.

The four groups — the Federation of State Medical Boards of the U. S., the American Hospital Association, the American Medical Association, and the Association of American Medical Colleges, recommended a program which would place foreign-trained physicians and American-trained doctors practicing in this country on the same level. However, before these foreign-trained doctors could practice in the United States they would have to be thoroughly screened as to the adequate use of English and whether or not their educational attainment compared favorably with that of the students of American schools at the time of graduation.

These foreign-trained doctors, before they would be permitted to practice in the United States would be required to take an examination in Basic Medical Sciences and Major Clinical Sciences, and to meet the requirements of the respective State Boards of Medical Examiners.

The Federation of State Medical Boards of the United States, approved, in principle, a draft of a uniform Medical Practice Act, but such a draft or act would only serve as a guide, and it would not be obligatory on any State to adopt or use this uniform act.

At its closing session, the Federation passed the following resolution declaring that "the Federation of State Boards insists on the present standards of educational competence and condemns the policy of appointing interns to hospital positions who are not graduates of accredited medical schools".

Television for teaching purposes was discussed at length and thought to have great potentialities in teaching physicians in search of postgraduate medical education with a great saving of time by the teachers and was recommended for serious consideration by medical schools.

The panel on legal medicine, participated in by well qualified discussants, recommended that medical students be given adequate instruction and training that they might be familiar with the many medical legal problems which can and

do present themselves when the doctor, after graduation, begins in active practice, and the student should be further informed as to how he can avoid becoming involved in unnecessary legal problems and malpractice suits.

It would seem advisable that our two medical schools should institute such a lecture course for the good of their students and for the welfare of the medical profession as a whole. This, we feel sure, would be a service which would be appreciated by the profession and would lessen the number of malpractice suits in our state and would, no doubt, tend to reduce our premiums on malpractice insurance.

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RED RIVER MEDICAL SOCIETY—Inactive

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Sec-Treas: Dr. J. Lane Sauls, Zwolle, La.

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Sec-Treas: Dr. Emile K. Ventre, Jr., Opelousas, La.

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Vice-Pres: Dr. Earl Morrogh, Cecilia, La.
Sec-Treas: Dr. Bernard deMahy, St. Martinville, La.

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Sec-Treas: Dr. Hilton K. Brown, Franklin, La.

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Sec-Treas: Dr. Paul Cashio, Lacombe, La.

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President: Dr. Charles R. Genovese, Independence, La.
Sec-Treas: Dr. H. M. Scarbrough, Ponchatoula, La.

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Sec-Treas: Dr. Buford J. Autin, 414 Lafayette St., Houma, La.

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Vice-Pres: Dr. Robert J. Young, Abbeville, La.
Sec-Treas: Dr. J. R. Nunez, Abbeville, La.

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President: Dr. Edwin H. Byrd, Leesville, La.
Sec-Treas: Dr. W. H. Broyles, Leesville, La.

WASHINGTON PARISH MEDICAL SOCIETY
President: Dr. Bruce H. Clements, Bogalusa, La.
Sec-Treas: Dr. C. W. Crain, Bogalusa, La.

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President: Dr. S. F. Martin, Minden, La.
Sec-Treas: Dr. T. A. Richardson, Minden, La.

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Sec-Treas: Dr. Sidney Bullard, 3833 Jeff. Highway, New Orleans 21, La.

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Sec-Treas: Dr. L. K. Mason, 803 Jordan Street, Shreveport, La.

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President: Dr. Henry Guerriero, 319 Wood St., Monroe, La.
Sec-Treas: Dr. Burchell Liles, Monroe, La.

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

NATIONAL HEALTH CONFERENCE

A small town doctor told a gathering of national rural health leaders that all the drugs at a medical man's command are helpless in treating bad health conditions that exist in some parts of rural America.

Dr. F. S. Crockett of Lafayette, Indiana, sounded the keynote of the Tenth National Conference on Rural Health at Milwaukee by underscoring the importance of individual cooperation in combatting local health problems.

Well-equipped hospitals and experienced doctors are essential, Dr. Crockett said. But the most important solution to the whole rural health problem is "knowing and doing the simple things that keep us well."

Unless each of us does the obvious thing—like screening doors and windows, eating well balanced meals, protecting ourselves against the weather or immunizing against communicable diseases—no number of doctors and hospitals can keep us well.

Dr. Crockett, who is chairman of the American Medical Association's Council on Rural Health, said that one of the basic aims of the National Rural Health Conference is to enlist the help of every rural resident.

"By improving and preserving the health of the individual," he said, "we can make our communities more healthful and desirable places to live."

The Milwaukee meeting opened on the afternoon of February 24, and continued through Saturday, February 28.

REGIONAL MEETING OF THE AMERICAN COLLEGE OF GASTROENTEROLOGY

A regional meeting of the Southern Region of the American College of Gastroenterology will be held in Memphis, Tenn., on Sunday afternoon,

24 April 1955. The Scientific Session will be held in The Skyway at the Hotel Peabody, commencing at 2:00 P. M., following the semi-annual meeting of the Board of Trustees of the College.

Participating in the program of the Scientific Session will be E. G. Campbell, M. D., Memphis, Tenn.; Jerome S. Levy, M. D., Little Rock, Ark.; Edward A. Marshall, M. D., Cleveland, Ohio; John M. McMahon, M. D., Bessemer, Ala.; James T. Nix, M. D., New Orleans; E. L. Posey, Jr., M. D., Jackson, Miss.; N. E. Rossett, M. D., Memphis, Tenn.; Henry G. Rudner, Sr., M. D., Memphis, Tenn.; L. C. Sanders, M. D., Memphis, Tenn.; S. L. Stephenson, Jr., M. D., Jackson, Miss.; I. Frank Tullis, M. D., Memphis, Tenn.

Members of the medical profession are cordially invited to attend. A copy of the program may be obtained from the Secretary, American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

TRUDEAU SCHOOL OF TUBERCULOSIS

Forty-first Annual Session

Despite the closing of the clinical facilities of the Trudeau Sanatorium, the forty-first session of the Trudeau School of Tuberculosis will begin Wednesday, June 1st, and continue to June 29th.

The staff, facilities and skills of the Trudeau organization laboratories, of the various sanatoria in the Saranac Lake area, and of the practising tuberculosis specialists of Saranac Lake will be called upon as in the past to present the program.

The course will cover all aspects of pulmonary tuberculosis and also certain phases of other chronic chest diseases, including those of occupational origin.

The schedule for the 1955 course is in preparation but copies of the program for 1954 are available.

Registrations will be limited and it is suggested that those planning to attend make early application for enrollment.

The tuition is $100, payable to the Trudeau School on or before the opening date, June 1, 1955. A few scholarships are available for those individuals who can qualify.

The Trudeau School of Tuberculosis has been approved for training of veterans under Public Laws and any applicant desiring to obtain veteran's benefits should clear his registration with the Veterans Administration before the session begins.

Applications and more detailed information may be obtained from: Secretary, Trudeau School of Tuberculosis, Box 200, Trudeau, New York.

INTERNATIONAL ACADEMY OF PROCTOLOGY TO MEET IN NEW YORK MARCH 23 - 26

New research in proctology and related fields, as well as the implications of these developments for the general practice of medicine, will be reported at the 7th annual meeting of the International Academy of Proctology, to be held from March 23 through 26 in New York City.

Panel discussions on cancer of the lower intestine and on ulcerative colitis will highlight the Academy's scientific sessions at the Hotel Plaza in New York City on March 23, 25, and 26, and at the Jersey City Medical Center on March 24.

Operating clinics and a symposium on intestinal surgery and related conditions will be given by members of the Jersey City Medical Center. A special group of film demonstrations will be presented in a Visual Education session.

In accordance with its established practice, the Academy extends an invitation to all physicians to attend its sessions, and the American Academy of General Practice will grant credits to its members attending the meeting.

TWENTY-EIGHTH ANNUAL SPRING CONGRESS

The Gill Memorial Eye, Ear and Throat Hospital announces its twenty-eighth annual Spring Congress, to be held in Roanoke, Virginia, April 4-9. All lectures will be held at the Patrick Henry Hotel. Operations and clinical demonstrations will be given at the hospital. Matriculation fee will be $75.00, and further information may be obtained from Dr. E. G. Gill, Box 1789, Roanoke, Virginia.

TESTS SHOW TOBACCO'S EFFECTS ON HEART

New laboratory tests have shown that cigarettes have a definite, immediate effect on the action of the heart in both normal persons and those with heart disease, four physicians said recently.

They recommended in the current (Feb. 12) Journal of the American Medical Association that heart disease patients should quit smoking entirely.

Significant increases in heart rate and blood pressure followed smoking of regular cigarettes by 65 persons tested, including both normal persons and those with coronary disease, according to Drs. Henry I. Russek and Virgil J. Dorset, Staten Island, and Dr. Burton L. Zohman, Brooklyn, all of the U. S. Public Health Service.

Another series of tests on 400 normal persons resulted in abnormal changes among 10 per cent, rising from 5 per cent in the 20-30 year age group to 15 per cent in the 30-40 year group. Dr. Isidore E. Buff, Charleston, W. Va., who made these tests, recommended that disease-free persons whose heart tests show abnormal results following smoking should quit. He could not say whether heart disease eventually would develop in these persons. But he said he felt that evidence so far makes it "highly desirable that these patients stop using tobacco in any form."

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

AUXILIARY MEMBERS START 1955 WITH VIGOROUS INTEREST IN PROJECTS

A recent letter from Mrs. George Turner, president of the Woman's Auxiliary to the American Medical Association contained the thought:

"Another year has borne its record to the skies!
Another year, untried, unproved, before us lies.
We hail with smiles its dawning ray.
How shall we meet its final day?"

In Louisiana members of the Executive Board have completed plans to attend the mid-year session to be held at the Hotel Bentley, in Alexandria, on Thursday, January 27, at 10 A. M. with luncheon at noon and unfinished business during an afternoon meeting. Mrs. M. C. Wiginton, state president, speaks glowingly of reports which have come in from committee chairmen and parish presidents, and in addition to visiting fourteen groups in meeting since October, has found time and enthusiasm to organize three new auxiliaries. When "Emma" visits your group, try to get a look at the calendar which hangs from her "little black book". Both the fulfilled engagements and the "futures" which constitute Emma's year as state president will have an enervating effect as to what can be accomplished when the motivation is strong enough.

OUACHITA PARISH

News sent in by Mrs. Irving J. Wolff from tho Ouachita Parish Auxiliary tells of meetings stressing many phases of the auxiliary program. Civil defense has been especially stressed with emphasis laid on the use and benefits of the work and the importance of a well informed public. Legislation concerning the recent regulations governing the nursing profession and the importance they play in a recuperative program formed another focal point for consideration.

This group acted as hostesses during the eighth annual conference of the Louisiana Health Council held in Monroe in November, and held an annual Christmas luncheon in December. Mrs. De Witt T. Milam reported on the activities of the A. M. A. Auxiliary convention held in San Francisco, and informed the membership of the points of her Health, Safety and Mental Health chairmanship. Mrs. Ralph Talbot, local nurse recruitment chairman, reviewed the "Careers in Nursing" aims, and the part the auxiliary plays in this work. The Future Nurses clubs were interpreted to the membership through the film JUGS giving a complete picture of their importance and valuable services to the public.

TANGIPAHOA PARISH

Tangipahca Parish welcomed home state president member Emma Wiginton with a Christmas party which was a tribute to her personal success and the honors she brought to the local group. Reports on all phases of auxiliary activity were made with particular stress on an increase in *Today's Health* subscriptions secured, Civil Defense Registrations completed, and a new Future Nurses club organized at Hammond High School.

With a small and scattered membership this group is typical of the many auxiliaries throughout Louisiana whose collective work has spelled such progress for projects intergrated with the success of the medical profession.

A beautiful silver tray with a touching inscription of friendship was presented to Mrs. Wiginton and accepted by her with affecting gratitude.

ORLEANS PARISH

Orleans Parish welcomed its state president to its January meeting held January 12, at the Orleans Club with a luncheon open to all members preceding the session. Mrs. Eugene Countiss was chairman of the luncheon, which has now been accepted as an annual event honoring the state president, with Mrs. James Bailey serving as co-chairman. Mrs. George Feldner presided with ease and charm as toastmistress. The invocation was given by Mrs. Edwin R. Guidry and flower arrangements of camellias were prepared under the supervision of Mrs. Esmond Fatter. Out of town guests besides the honoree, Mrs. Wiginton, were Mrs. Henry W. Jolly, Jr., and Mrs. Charles I. Black of Baton Rouge.

Dr. Edgar Hull, newly elected president of the Orleans Parish Medical Society, addressed the group in the auditorium at the meeting which followed. His talk was an analysis of how the medical profession appeared to and was interpreted by laymen, and how the auxiliary could function to shape that interpretation. Dr. Hull used quotations from the Bible interspersed with colloquialisms from modern journalism to stress his points.

Also on the program, prepared and MC'ed by Mrs. John Gooch, was Mrs. Ralph McDonogh, an auxiliary member who has made a hobby of china collections and who with illustrations of her own precious pieces gave an informative and interesting demonstration.

Mrs. Wiginton's talk reviewed briefly the state projects. She managed to add a personal twist to the explanation of each so that the older members were given a new viewpoint and the newer members a thorough insight into how the national and state programs are worked through the individual auxiliary member. Mrs. Wiginton's theme for her year as president, "Widening Horizons to Work, Peace, and Love" is exemplified in her attitude toward the program as a whole and in her interest in personally meeting and talking with each member.

Mazie Adkins Guidry
(Mrs. Edwin R.)
Chairman of Press and Publicity

BOOK REVIEWS

Hypothyroidism: An Essay on Modern Medicine; by Paul Starr, M.D., Springfield, Illinois, Charles C Thomas, 1954, Pp. 127, Price $3.75.

This is a 127 page book in the American Lecture Series by the Chairman of the Department of Medicine in the University of Southern California. It presents the approach, the point of view and the methods of a particular thyroid clinic in dealing with hypothyroidism. It is by no means a systematic exposition of the clinical features of myxedema. Perhaps the main thesis of the author is that there are not infrequently mild degrees of hypothyroidism which are capable of being recognized by modern methods and that treatment of these milder syndromes is of benefit to the patient. This represents a somewhat different opinion from that of Dr. J. H. Means, who has rather emphasized the rarity of milder, intermediate degrees of hypofunction short of classical myxedema. Dr. Starr's book will be useful if it helps to keep minds open and critical on this question. Great stress is placed on protein bound iodine determinations in the evaluation of hypothyroidism and the PBI level is much used by this group in estimating therapy requirements as well. Here one cannot but wonder if the laboratory tail is not wagging the clinical dog.

The book should be of interest to internists as a provocative presentation of a minority view on an unsettled question. It may provide comfort to those who have been accustomed to administer thyroid substance on empirical grounds and give pause to those who have been ready to question the use of thyroid substance in the absence of myxedema.

E. B. Ferguson, M. D.

Understanding the Japanese Mind; by James Clark Moloney, M.D., New York, N.Y., Philosophical Library, 1954, Pp. 252, $3.50.

The title of the book is somewhat misleading, for the author does not elucidate a great deal about the Japanese mentality. He does depict in a well documented manner such aspects of Japanese thinking that are clearly in conflict with the basic tenets of Freudian psychoanalysis, which was the product of Viennese late 19th century culture.

His main point is to use Western psychoanalytic techniques and principles as devices to gain insight into Japanese thought in terms of the twists and metamorphoses inflicted by that culture. It becomes evident, as Moloney well points out, that the Japanese culture is today a mimicry of the West festooned upon its centuries-old nationalism. Japan is a unity with its subjects and products fused into it.

Thus the process of "disindividualism" occurs from birth on, ultimately culminating in the "coeval" state of utter nationalism. This conclusion is supported by historical and philosophical sources. The Japanese have taken the psychoanalytic concepts that give impetus to individuality and altered them (Moloney calls this syncretism) to their opposite of producing union with the coeval state of being a true Japanese.

For the psychiatric reader the book has some appeals, as when Dr. Moloney describes the psychotics and their care in Japan. One might pause more than seldom to take issue with some of his theoretical concepts of psychodynamics, such as skin-ego. It might, however, seem to the general medical reader that the author has spent a great deal of space without clarifying the Japanese mind beyond its immediate reactions to Freudian psychoanalysis.

Irvin A. Kraft, M. D.

An Atlas of Congenital Anomalies of the Heart and Great Vessels; by Jesse E. Edwards and others, Springfield, Illinois, Charles C Thomas, 1954, Pp. 202, Price $13.50.

The organization and presentation of this material is precisely as the name implies—as an atlas. The pathologic material and roentgenograms reproduce very well. Most of the defects are illustrated by a diagram indicating disturbed hemodynamics. However, the clinical data presented is inadequate to allow this atlas to be used widely for solution of clinical problems. The variations in history, physical examination, electrocardiograms, roentgenograms, and special studies such as angiocardiograms and cardiac catheterization are inadequately treated if this volume is to be used to help solve clinical problems of congenital cardiac disease. As an atlas it is well done but as a source of help to the clinician it leaves much to be answered by other books.

Clarence T. Ray, M. D.

PUBLICATIONS RECEIVED

Lea & Febiger, Phila.: Animal Agents and Vectors of Human Disease, by Ernest C. Faust, M. D.

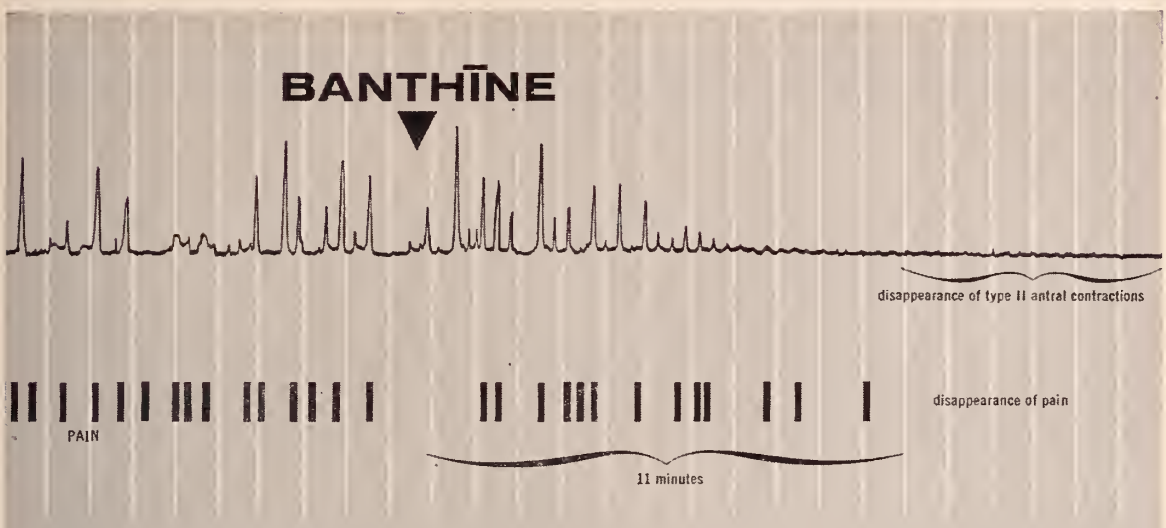
J. B. Lippincott Co., Phila.: Regional Enteritis, by Frederick F. Boyce, M. D.

W. B. Saunders Co., Phila.: Reactions with Drug Therapy, by Harry L. Alexander, M. D.; Peripheral Vascular Diseases, by Edgar V. Allen, M. D., Nelson W. Barker, M. D., and Edgar A. Hines, Jr., M. D. (2nd Edit.).

Charles C Thomas, Publisher, Springfield, Ill.: Normal Labor, by Leroy A. Calkins, M. D.; Regional Allergy of the United States, Canada, Mexico & Cuba, by Max Samter, M. D., and Oren C. Durham, Chief Botanist.

University of Florida Press, Gainesville: Florida's Hospitals and Nurses, by John M. Maclachlan, Ph. D.

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Effect of 100 mg. of Banthine administered orally on antral gastric motility and duodenal ulcer pain.

Hightower, N. C., Jr., and Gambill, E. E.: Gastroenterology 23:244 (Feb.) 1953.

Hypermotility and Hyperacidity

A recent evaluation of anticholinergic therapy in peptic ulcer emphasizes the fact that now the profession has at its disposal agents that are "effective in reducing both secretory and motor activity of the stomach."

The effect on motor activity is generally more pronounced and less variable than on secretion; pain relief is usually prompt; a high degree of effectiveness is noted in ambulatory ulcer patients.

Ruffin, J. M.; Texter, E. C., Jr.; Carter, D. D., and Baylin, G. J.: J.A.M.A. 153:1159 (Nov. 28) 1953.

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References: *Chinsky, M.: Evaluation of methods for determining basal metabolic rate in office practice,* J.A.M.A. *Vol. 155, No. 12, pp. 1055-1057, July 17, 1954.*

Read, Marion J. and Barnett, Charles W.: New formulas for predicting basal metabolic rate from pulse rate and pulse pressure, The Archives of Internal Medicine, *Vol. 57, pp. 521-532 (1936).*

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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.: J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.: Brit. M. J. 2:755, 1953.

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Brown, H. W.: J. Pediat. 45:419, 1954.

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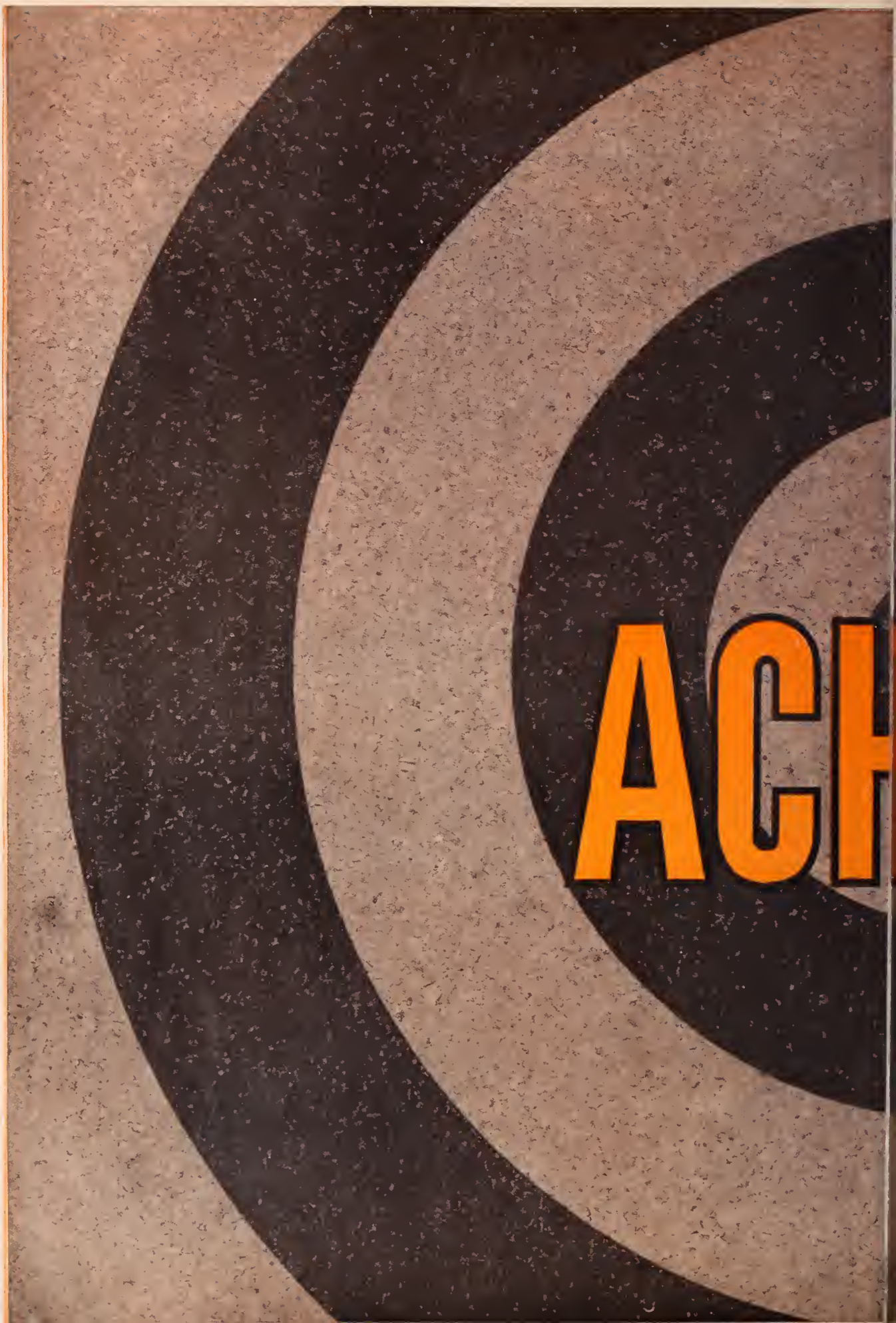
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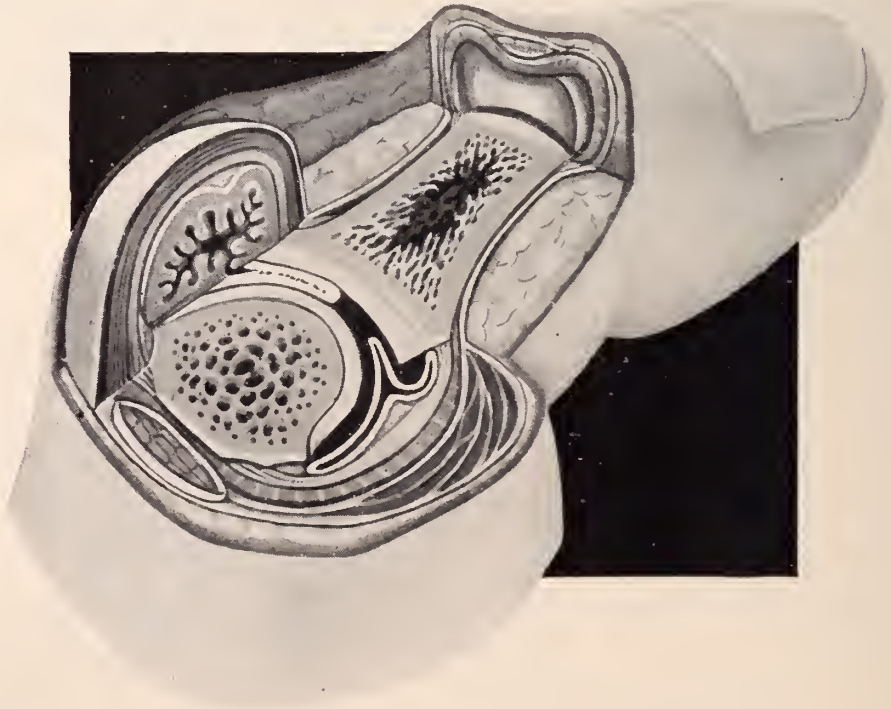
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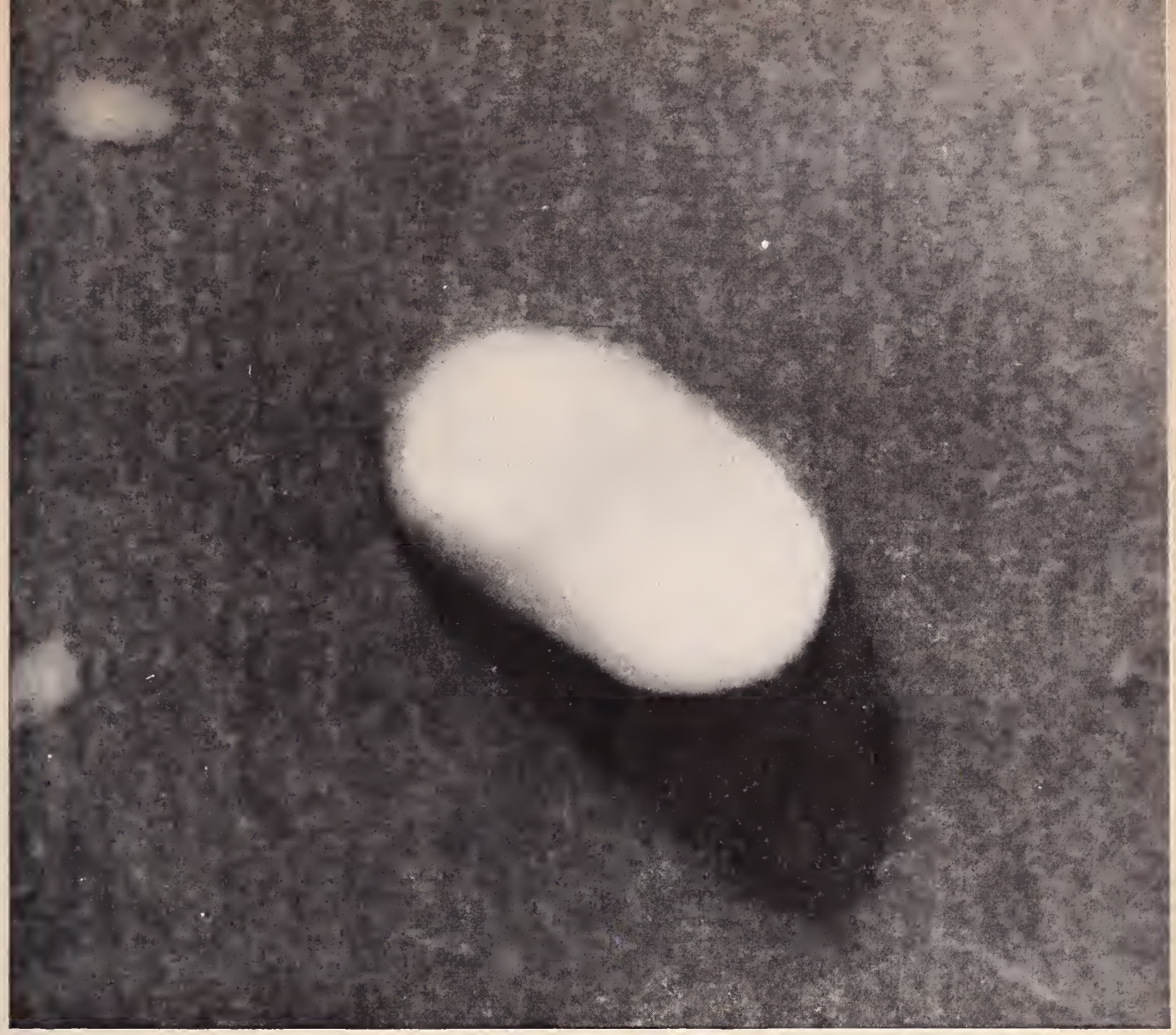
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*Bunim, J. J.: Research Activities in Rheumatic Diseases, Pub. Health Rep. *69*:437, 1954.



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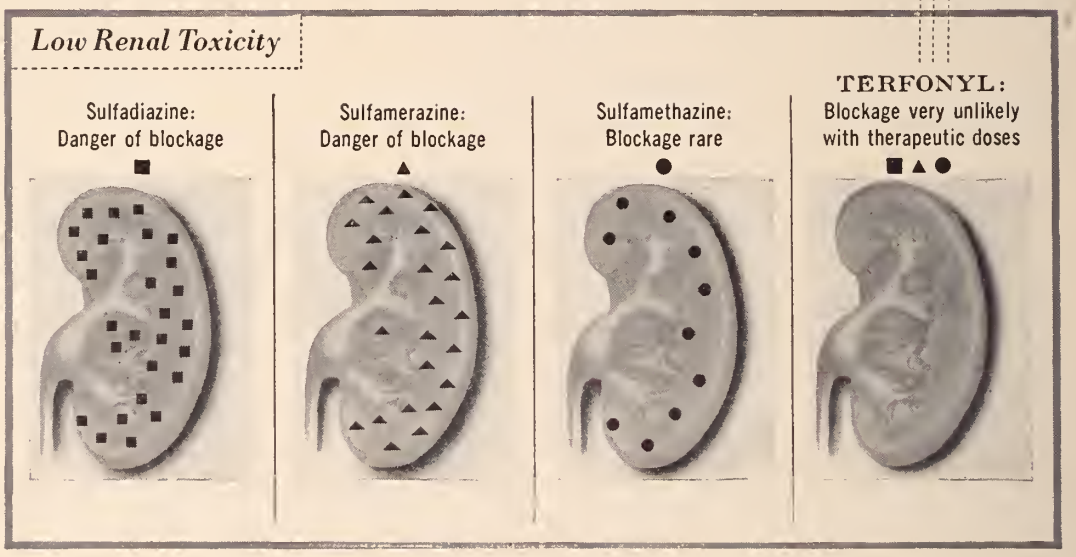
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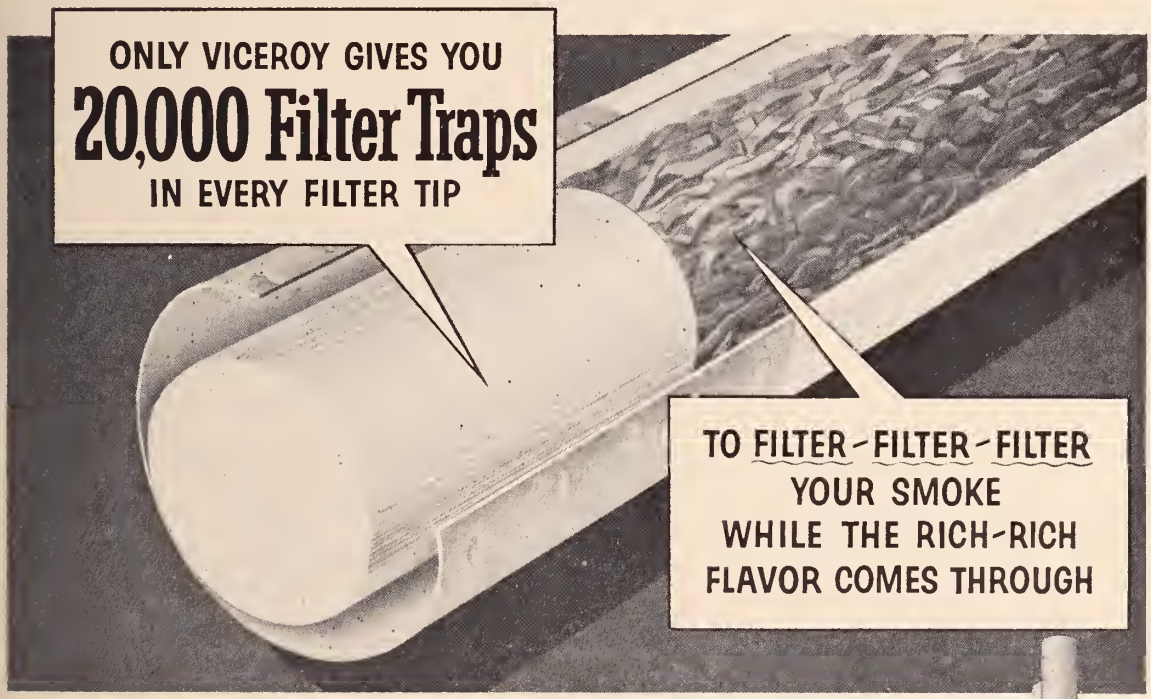
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In the past ten years, the number of grants-in-aid sponsored by the ACS totaled 2,025; institutional research and special purpose grants, 297; research fellowships and scholar grants, 513.

In 1954-55, ACS research funds are financing 79 fellowships and scholar grants to help train young investigators for research careers.

ACS grants are now operating in 36 states and the District of Columbia.

* From **1955 CANCER FACTS AND FIGURES** — American Cancer Society Bulletin.



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POLIO VACCINATION PROGRAM

On or about April 12th Dr. Thomas Francis, Director, Poliomyelitis Vaccine Evaluation Center, is expected to release the evaluation report on the Salk Polio Vaccine field trials of 1954.

If the National Institutes of Health agree that the vaccine is safe and effective and license it, the National Foundation for Infantile Paralysis will provide the State Department of Health with enough vaccine to vaccinate the first and second grade children of each public, private and parochial school in Louisiana.

In addition Caddo, Bossier and Rapides Parishes will receive enough vaccine to vaccinate the second grade children of last year who were not vaccinated and the fourth grade children of this year. These parishes were the Louisiana field trial areas of 1954 and these children served as controls in last year's program.

Vaccine will be administered only to those children whose parents, in writing, request that the child be vaccinated.

The program this year is not to be another test. If the vaccine is licensed it will be the first use of a new preventive vaccine.

The State Department of Health, because of the short time remaining before the start of the current polio season, is going ahead with plans to vaccinate the children on the assumption that the vaccine will be licensed. This will permit earlier use of the vaccine if it is licensed.

Louisiana has approximately 180,000 children who are eligible for vaccination in the official program. Each of the children for whom vaccination is requested will receive 3 injections of 1 cc each of vaccine. The second injection will be given one week after the first and the third, one month after the second.



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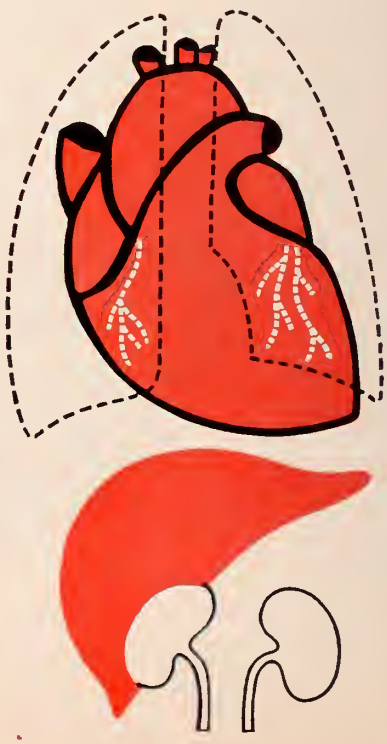
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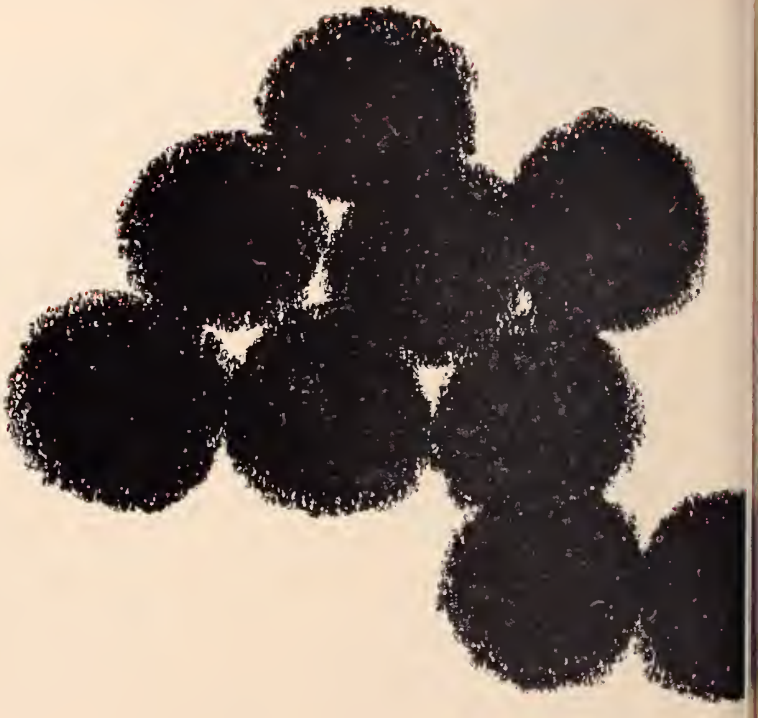
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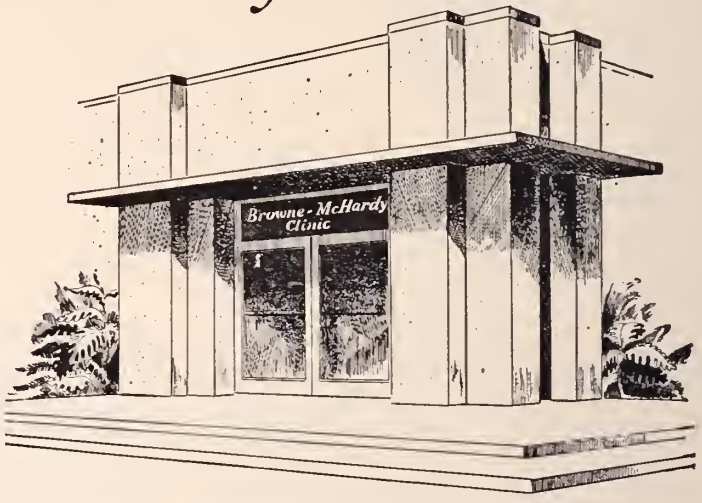
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*Pratt, R., & Dufrenoy, J.: Texas Rep. Biol. & Med. *12*:145, 1954.

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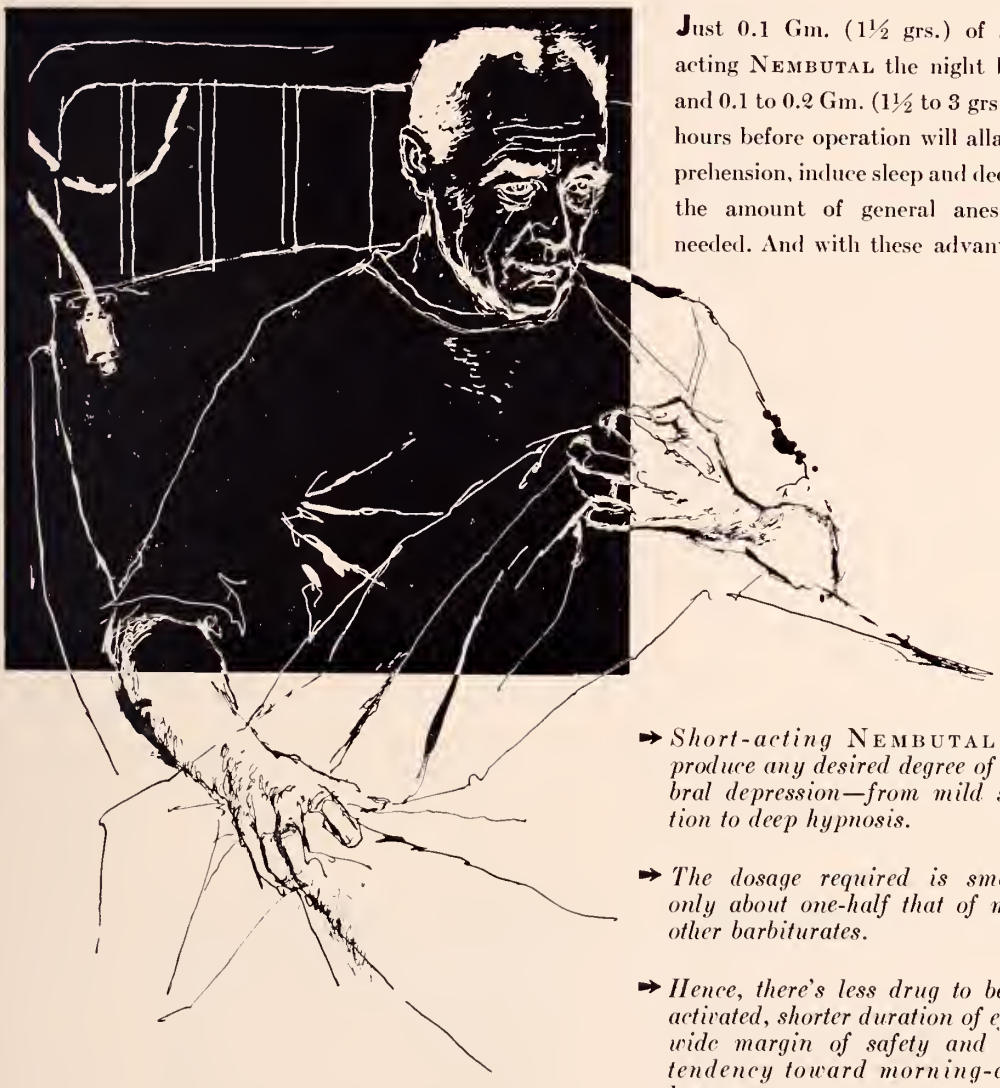
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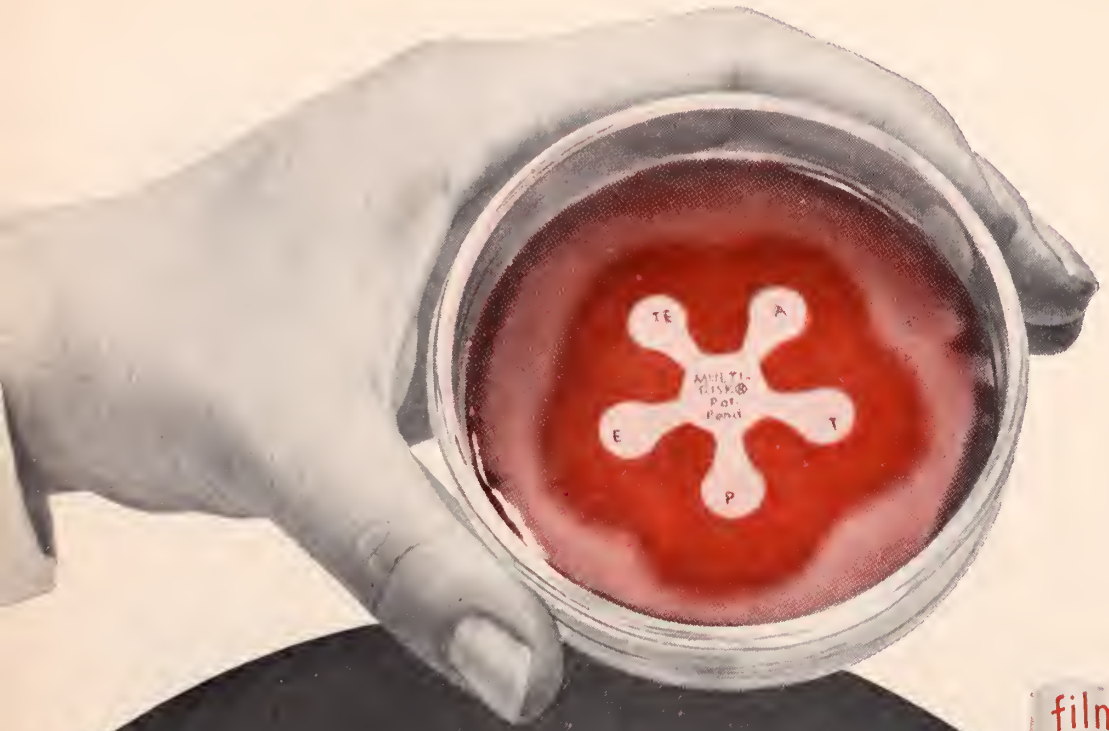
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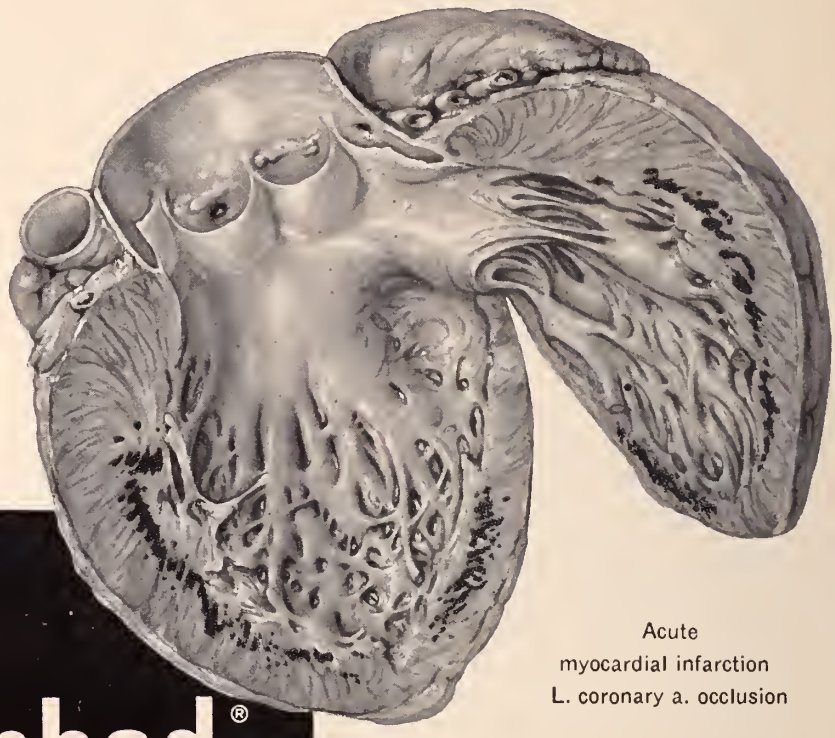
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4 gm	29.6%	28.6%	27.6%	26.6%	25.6%	25.0%	24.2%	23.5%	22.8%
5 gm	37.0%	35.7%	34.5%	33.3%	32.1%	31.2%	30.3%	29.4%	28.6%
6 gm	44.4%	42.8%	41.4%	40.0%	38.5%	37.5%	36.4%	35.3%	34.3%
7 gm	51.8%	50.0%	48.3%	46.7%	44.8%	43.8%	42.4%	41.2%	40.0%
8 gm	59.3%	57.2%	55.2%	53.3%	51.3%	50.0%	48.4%	47.2%	45.6%
9 gm	66.6%	64.3%	62.1%	60.0%	57.7%	56.3%	54.5%	52.9%	51.4%
10 gm	74.2%	71.4%	69.0%	66.7%	64.2%	62.4%	60.6%	58.8%	57.2%
11 gm	81.4%	78.5%	75.8%	73.3%	70.5%	68.8%	66.7%	64.7%	62.8%
11 gm	81.4%	78.5%	75.8%	73.3%	70.5%	68.8%	66.7%	64.7%	62.8%
12 gm	88.9%	85.7%	82.8%	80.0%	76.8%	75.0%	72.7%	70.6%	68.6%
13 gm	96.2%	92.6%	89.7%	86.7%	83.3%	81.2%	78.8%	76.4%	74.3%
14 gm	103.7%	100.0%	96.5%	93.3%	89.7%	87.4%	84.8%	82.3%	80.0%
15 gm	111.1%	107.2%	103.3%	100.0%	96.2%	93.7%	90.8%	88.2%	85.8%
16 gm	118.6%	114.2%	110.8%	106.6%	102.6%	100.0%	97.0%	94.2%	91.4%
17 gm	125.8%	122.4%	117.2%	113.2%	109.0%	106.2%	103.1%	100.0%	97.2%
18 gm	133.2%	128.6%	124.2%	120.0%	115.2%	112.6%	109.2%	105.8%	102.8%
19 gm	140.7%	135.6%	131.1%	126.6%	121.8%	118.7%	115.1%	111.7%	108.6%
20 gm	148.1%	142.8%	137.9%	133.3%	128.2%	125.0%	121.2%	117.7%	114.2%

"Another reason for inaccuracies in hemoglobin estimation is that the first crude instruments which were developed used arbitrary standards and reported the results in terms of per cent of a so-called "normal value". There has never been an agreement as to what value is most representative of normal. As new instruments and methods were developed, each manufacturer used his own standard, the result being that aliquots of blood on one instrument might read 100% and on another 85%, and neither would tell how much hemoglobin there was. There can be no one value for hemoglobin which is normal for all individuals, since the concentration of hemoglobin varies with age, sex and altitude. The reporting of hemoglobin in per cent belongs to the horse and buggy days and should be relegated to the museum of interesting but useless antiques along with the saddle bag and divining rod.

"There is one way to report hemoglobin and that is in terms of absolute value or grams per 100 ml. No clinician should be willing to accept the report of hemoglobin in terms of per cent." (From the TEXTBOOK of CLINICAL PATHOLOGY by Miller, written by L. W. Diggs, M.D.)

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1. Bunim, J. J.; Pechet, M. M., and Bollet, A. J.: J.A.M.A. *157*:311 (Jan. 22) 1955.

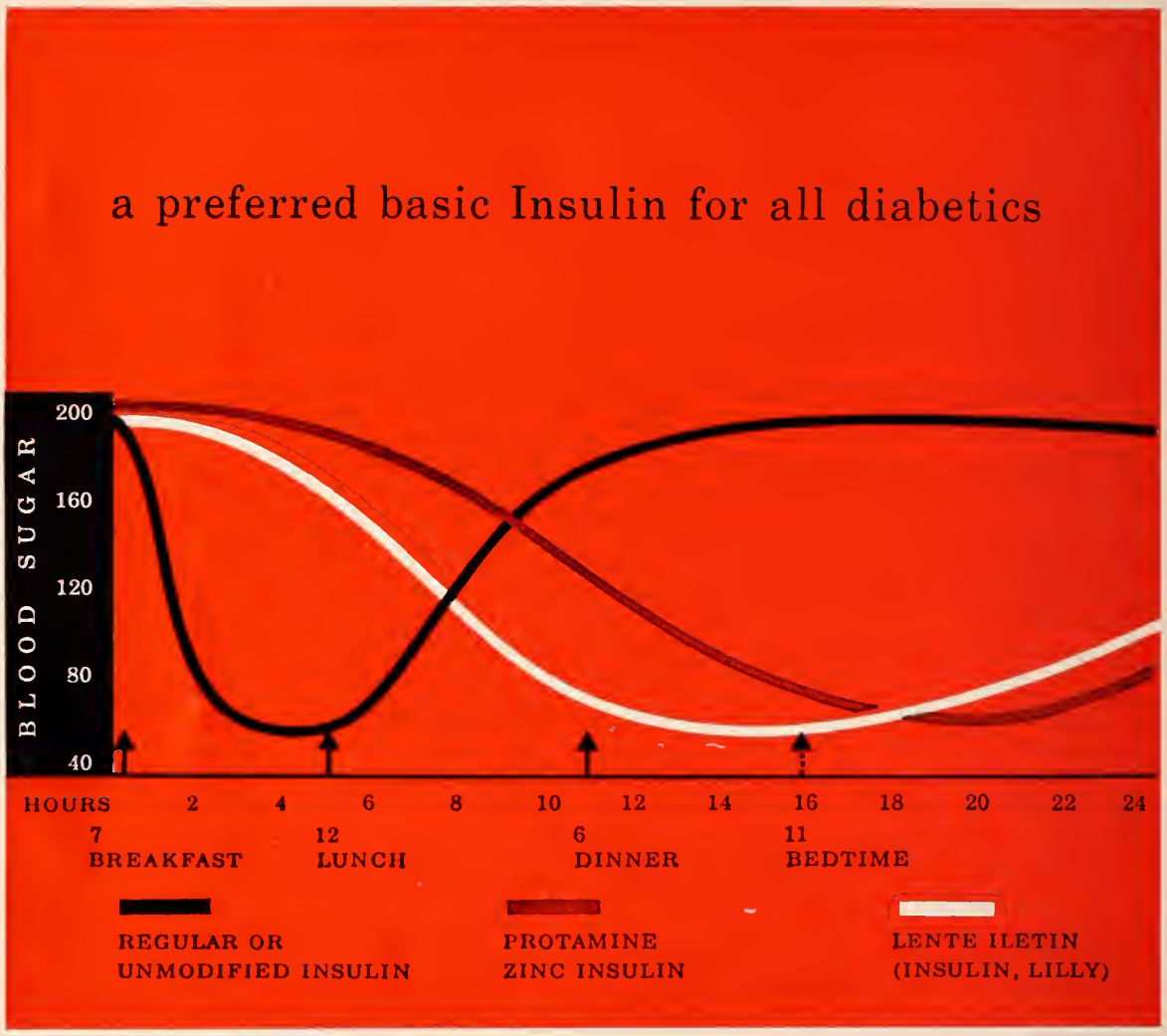
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THE SURGICAL TREATMENT OF MITRAL INSUFFICIENCY *

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PHILADELPHIA, PA.

INTRODUCTION

Since the advent of cardiac surgery, the attention of the physician and surgeon has been focused upon mitral regurgitation. This lesion, formerly considered benign and compatible with normal life and functional freedom, has revealed itself as a considerable factor in the prognosis of patients with rheumatic heart disease.

Mitral regurgitation may exist as the only aftermath of rheumatic activity, or it may accompany, in varying physiologic degrees, the presence of mitral stenosis. In either case it adds to the cardiovascular burden and may be responsible for all or the majority of the manifestations of heart disease.

This lesion is peculiar in that it places a major physiological burden upon the left ventricle. Its secondary effects are upon the pulmonary vascular tree, and subsequently, the right ventricle. In brief, it has the same major effect as mitral stenosis with an additional effect upon the left ventricle.

Significant mitral regurgitation is incompatible with normal functional integrity whether it exists alone or in combination with mitral stenosis and, therefore, fully justifies the various surgical techniques applied to its correction.

A point which is becoming increasingly more evident is the frequent inaccuracy of the auscultatory recognition of mitral insufficiency, since we are able to compare the auscultatory findings preoperatively with the findings at surgery. A quantitative evaluation of regurgitation presents somewhat of a problem. We have attempted to do this by submerging the index finger in water and ejecting varying quantities of fluid through varying sized orifices toward the index finger and in such a fashion evaluate the amount of the regurgitant jet of blood with the index finger within the left atrium. We have attempted to evaluate the degree of regurgitation and after a considerable experience we have felt that a regurgitation of 10 cc. or less is of insignificant dynamic physiologic importance. When a greater amount of regurgitation exists, one must consider the surgical correction of this lesion.

In contrast to the condition of the left ventricle in mitral stenosis which remains relatively normal in size, the ventricle in mitral insufficiency becomes greatly dilated and hypertrophied by virtue of the compensatory effect to produce an adequate aortic output when a large portion of the contents of the left ventricle is re-

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gurgitated into the left atrium. This is obviously less prominent when a minor insufficiency exists.

PHYSIOLOGICAL CLASSIFICATION

Mitral insufficiency may be classified physiologically by simply dividing it into grades 1, 2, 3, and 4, depending upon the magnitude of the regurgitation per ventricular systole. Such quantitative evaluation is rather difficult by cardiac catheterization because of the frequency with which atrial fibrillation is present (atrial fibrillation was present in 71.3 per cent of our cases operated for mitral insufficiency) while digital "palpation" of the regurgitant jet of blood with the index finger is not entirely accurate, it seems to be the most reliable method we have for evaluation at the present time.

We feel that a grade 1 or 1 plus insufficiency is a small regurgitant jet which we have estimated to be no more than 5 cc. per heart beat.

A 2 plus regurgitation is somewhat larger and is a greater amount of blood than what we estimate to be no more than 10 cc. per heart beat.

A 3 plus regurgitation is estimated to be between 10 and 30 cc. per heart beat, and the 4 plus regurgitation to be all of those cases exceeding 30 cc. of regurgitation per ventricular systole.

PATHOLOGIC CLASSIFICATION

Mitral insufficiency may be classified, according to the type of lesion it presents, into congenital, traumatic, functional. (Table 1.)

TABLE 1
CLASSIFICATION OF MITRAL INSUFFICIENCY

Type of Valve	Number of Cases	Percentage
Functional Insufficiency	58	13.5
Organic or Mechanical Insufficiency	158	36.9
Traumatic Insufficiency		
Insufficiency created	158	36.9
Insufficiency increased	47	11.0
Congenital Insufficiency	7	1.7
TOTAL	428	100.0

Congenital Mitral Insufficiency. There are undoubtedly many different congenital anomalies of the mitral valve which might produce insufficiency; however, we have only encountered two types. There were 3 patients with one or more perforations of either one or both of the leaflets of the valve. There were 5 cases encountered which had an anomaly which was associated with an interatrial septal defect of the ostium primum type. A congenital cleft in the septal leaflet was proved subsequently in 2 of these patients.

Traumatic Insufficiency. While rare instances have been reported in which mitral insufficiency has resulted from a bullet wound[1] or a stab wound, however, the common type encountered is that which follows surgical treatment for mitral stenosis (Fig. 1). While the significance of

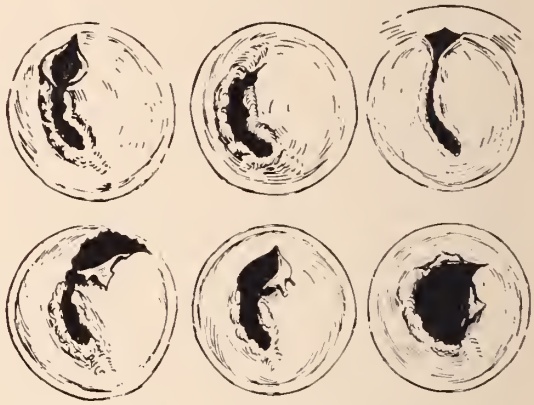


Figure 1. Traumatic insufficiency.

(a) Extension of commissural separation beyond normal anatomical limits of support causes limited insufficiency.

(b) Deviation of valvular separation slightly from normal commissural line.

(c) Extreme extension of commissural separation into heart wall may cause division of the atrioventricular annulus.

(d) Separation of one leaflet from its heart wall attachment.

(e) "Flail" valve due to separation of a leaflet from its supporting chordae at one extremity.

(f) Division of the continuity of a leaflet causes great insufficiency.

such regurgitation is usually not great, it is not infrequent. It was found to have occurred in varying degrees in 24.8 per cent of 635 consecutive patients operated upon for pure mitral stenosis, and the regurgitation was increased in 26.7 per cent of 176 cases operated upon for mitral stenosis which had associated insignificant

regurgitation preoperatively with a resultant increase in the insufficiency previously existing. These figures are somewhat misleading, however, and the importance of the creation of such a regurgitation is reflected directly in the operative mortality in that the operative mortality was 8.8 per cent in those cases where regurgitation was either created or increased, while it was 7.9 per cent among those patients who had no change in the competence of the mitral valve after mitral commissurotomy, the difference in the mortality being 0.8 per cent. There seemed to be no difference in the postoperative morbidity in these two groups.

Functional Insufficiency. A lack of the normal tone of the myocardium may result in a dilatation or overstretching of mitral annulus fibrosus. Such a dilatation of the annulus simply retracts the leaflets of the mitral valve and their edges do not come into apposition at the time of closure. It is frequently felt that this type of regurgitation is transient and reversible and not of appreciable significance. However, this may occur in an irreversible form in the presence of marked left ventricular enlargement resulting from aortic valvular disease and perhaps in some instances of essential hypertension. Apparently, a destruction of the annulus fibrosis may result from rheumatic disease and this is perhaps the more common persistent or permanent type of dilatation of the annulus. In many of such cases, the character of the mitral leaflets is almost within normal limits (Fig. 2).

It appears that when one annular dilatation has progressed to a certain point,

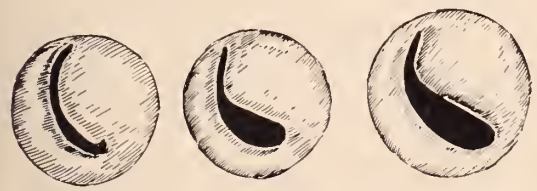


Figure 2. Functional insufficiency due to annular overstretch. The leak is always posteriorly located.

(a) Normal valve orifice.
(b) Moderate functional insufficiency.
(c) Extreme functional insufficiency.

a vicious cycle may result. Since the compensatory mechanism for mitral regurgitation is ventricular dilatation and hypertrophy, further stretching of the atrial ventricular ring will result. It follows that more valvular insufficiency will, in turn, require further compensatory ventricular dilatation and a progression of the lesion ensues.

In most such cases, the anterior portion of the valve orifice remains competent, while the posterior commissure is the site where the major portion of the regurgitation occurs. It would seem that the best explanation for this phenomenon is due to the greater amount of valvular tissue in the anterior portion of the valve, and to the fact that the zone of contact in the anterior portion of the orifice has a larger amount of valve substance in apposition, and at the most posterior aspect of the commissure the valve edges normally are just barely in contact (Fig. 3 a, b, c, d).

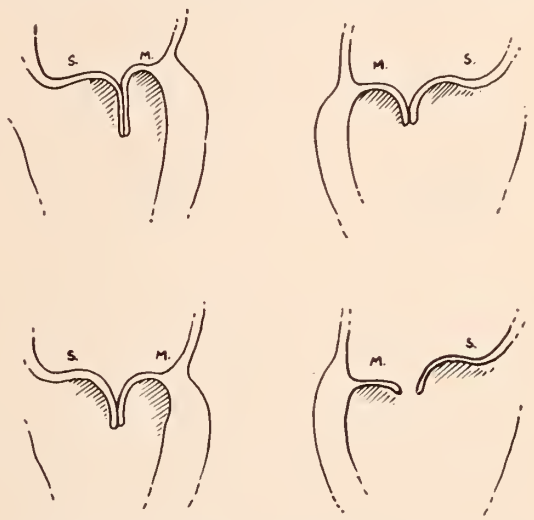


Figure 3. Anatomical explanation for posterior localization of incompetence in annular dilatation.

(a) Long section of normal valve in ventricular systole near anterior commissure.
(b) Same near posterior commissure.
(c) Edge approximation maintained anteriorly in annular dilatation due to presence of reserve valvular tissue.
(d) Failure of edge approximation in posterior portion of valve in annular dilatation.

If a symmetrical dilatation of the annulus occurs, of course, the portion of the valve which would first lose contact when it is

closed would be the posterior portion, and the more anterior portion of the commissure would still be in contact until extreme dilatation results.

This type of insufficiency occurred in 49 of our patients and there was no associated stenosis or distortion of the valve leaflets. Of course, there are many instances when there may be associated leaflet distortion, and this further complicates the lesion.

Mitral Insufficiency Due to Rheumatic Distortion of the Valve Leaflets, or Organic Insufficiency. With this type of lesion, the valve leaflets are thickened and distorted due to rheumatic disease and there is almost always an associated mitral stenosis. In many instances, we find severe degree of both mitral stenosis and insufficiency to coexist. Such a situation results in a "teardrop" shaped orifice with the "bulbous" portion of the teardrop representing the posterior commissure (Fig. 4 a and b).



Figure 4. Development of teardrop valve.
(a) Functionally insufficient valve.
(b) Superimposition of stenosis upon the anterior (competent) portion of the valve.

Another form of insufficiency which should be considered in this classification is that in which there is marked irregularity of the valve edges due to thickening, and quite frequently calcification. This is usually found in association with a very hard valve either due to the very severe fibrosis or extensive calcification of the leaflets resulting in an arcuate type of valve.

Rheumatic disease very frequently will involve the chordae tendineae and papillary muscles and by the process of either fusion, distortion, or shortening, will result in retraction of the valve edge downward or into an abnormal position, usually lateral, and the valve edges cannot come into apposition during ventricular systole. Dodrill,[2] and Kay [3] have suggested digitally freeing up the adherent or fused chordae tendineae by a transvalvular approach. The authors and associates [4] have attempted to advance the displaced leaflet toward the atrium by using a transventricular pericardial strip to provide a suture to draw the free edge of the leaflet downward toward the ventricular apex. Recently, one of the authors (W. L. J.) has modified the teshnique whereby a transventricular probe is passed through one edge of the mitral leaflet to suspend it when there is differential shortening of the chordae and when a portion of the mitral leaflet must be suspended (Fig. 5).

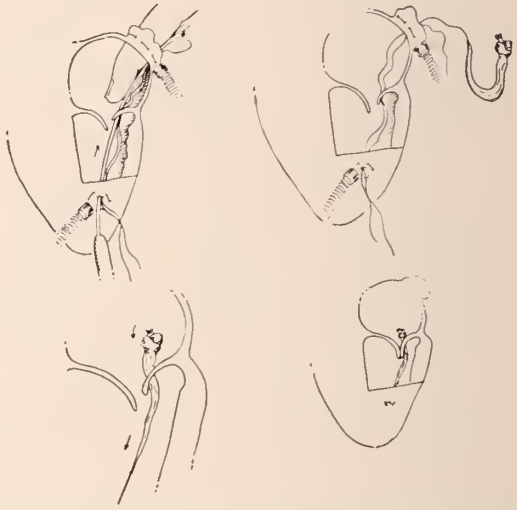


Figure 5. Suspension of mitral leaflet in mitral insufficiency due to unequal shortening of chordae.
(a) By transventricular passage, threaded probe pierces the higher leaflet and follows the finger to emerge from left auricular appendage.
(b) Suture is grasped, probe is withdrawn, and the atrial end of the suture is attached to the tapering end of a knotted pericardial graft.
(c) Pericardial strip drawn into heart.
(d) End of new support secured to epicardium.

Traction upon this strip of pericardium which is attached to the edge of the valve leaflet will result in what might be considered an "artificial" chorda tendinea.

CORRECTION OF ACTUAL OR RELATIVE LACK OF VALVE SUBSTANCE

Results with three different surgical procedures to correct mitral insufficiency are shown in Table 2.

TABLE 2
OPERATIVE MORTALITY FOR THE THREE TECHNIQUES FOR CORRECTION OF MITRAL INSUFFICIENCY

Type of Operation	Number of Cases Operated	Mortality
Transventricular Sling "Hammock"	52	38 %
Transventricular Suture of Valve Leaflet	72	27.8%
Transventricular Suture with "Stitcher"	19	21 %

A transventricular segment of an inverted vein hung loosely beneath the incompetent mitral valve was first described by Murray,[5] the effect of which was to have the graft swing into the mitral valvular orifice during ventricular systole in order to occlude the incompetent valve orifice. This technique was subsequently modified by Bailey [6] by using a pedicled graft of pericardium across and below the incompetent mitral orifice and, in a similar fashion as the Murray type of graft, this pericardial tube functioned to swing into the incompetent valve orifice, and during ventricular diastole the graft would fall away from the mitral orifice to allow filling of the ventricle. Our experience with this "hammock" below the mitral valve was disappointing, the mortality rate being 38 per cent in 52 cases. (Table 2) The reason for the failure of this procedure was due to the trauma during the operative procedure resulting in instances of ventricular fibrillation and cardiac arrest. On some occasions, the graft became swollen and the increased bulk reduced the ventricular capacity seriously. Some patients developed an unexplained tendency toward bleeding and in some unexplained fashion the normal bleeding and coagulation mechanism was disturbed.

The ultimate outcome of these grafts resulted in the shrinking and, of course, shortening of the graft, and finally the procedure was abandoned.

In view of our previous experience with the ultimate fate of transventricular pericardial hammocks, it was presumed that eventually shrinkage and fibrosis of the graft and the late extension of the fibrosing process into the adjacent valve leaflets would result in sealing of the posterior peripheral segment of the valve orifice by fusion of the adjacent valve leaflets as well as the tissue suture.

It has been found that pericardial grafts become degenerated into shrunken fibrotic chords when a "sheet" pericardial graft is used in the experimental animals.[7]

We have had occasion to examine at a second operation a transventricular graft of pericardium in a patient who subsequently developed mitral valvular obstruction because the graft had become sealed to the valve orifice, restraining regurgitation but also producing mitral stenosis. It was possible to perform an instrumental "commissurotomy," cutting the graft away from the septal leaflet thus restoring good valve function as well as relieving the stenosis and without restoring the incompetence. The graft remained attached to the mural leaflet adding a considerable amount of new living tissue to its retracted free edge. From this experience came the concept of deliberately performing selective plastic grafting to the edge of the mural leaflet.

In addition, four patients have come to autopsy four months to two and one-half years after the placement of pericardial sutures within the heart. In all instances, the graft was completely replaced by fibrous connective tissue. The thicker grafts have shown shrinkage and contraction. A thinner graft had become elongated and stretched out.

In summary, we may say that pericardial sutures or grafts placed within the free cardiac chambers do not die or dissolve; they become completely replaced by fibrous connective tissue and tend to shrink both in length and in diameter. The latter tends to become about one-half of the original size, although it must be remembered that initially (twelve hours to ten days) these grafts may swell to two to four times their normal diameter and, hence, may encroach seriously upon

the capacity of the chamber in which they are placed.

The application of these observations in further use of such grafts is obvious. They cannot be depended upon for prolonged flexible movement. They can be used as suture material or as grafts to add fibrous tissue to the structure to which they are applied. While they shrink significantly, the larger grafts remain of appreciable size, at least for a period of two years and presumably indefinitely.

CREATED MITRAL STENOSIS

Another very pertinent point is concerned with the possible surgical production of an incapacitating degree of mitral stenosis. While the likelihood of such an occurrence would seem to be extremely remote in patients with widely open valve orifices, incompetent chiefly or entirely because of annular dilatation, it did develop in several patients with valve openings which were of borderline size even after the performance of an anterior commissurotomy.

This experience led to a modification of the concept of actual suturing together the posterior portions of the leaflets in all cases where there was even the slightest doubt as to the adequacy of the eventual size of the opening. Instead, a heavy suture of pericardium was placed between the posterior commissure and the margin of the mural leaflet usually at about its midportion. This amounted to an attempt to obliterate the exaggerated concavity due to fibrosis and retraction in this portion of the margin of this leaflet by adding new grafted tissue to its free edge. This permitted unhampered movement of the septal leaflet while the valve opening during diastole remained nearly as large as before. In effect, the result aimed at was similar to that momentarily accomplished by placing the finger tip within the posterior incompetent portion of the valve orifice (Fig. 6). Unfortunately, the transventricular approach significantly limited the size of the suture which could be used conveniently. Hence, the regurgitation was merely reduced in many



Figure 6. Complete momentary correction of mitral insufficiency by blocking posterior incompetent portion of valve. Large orifice prevents significant obstruction.

of these cases and not completely abolished. The clinical result obtained in these individuals was about proportional to the technical achievement in reducing the noted regurgitant jet.

Recently, one of the authors (W. L. J.) introduced an instrument for intracardiac suturing which has been modified by other members of our Clinic. This mitral stitcher is now a satisfactory device for suturing within the heart by a transauricular approach (Fig. 7 and Fig. 8). Since this method of valvular repair has become possible, very striking improvements in the operative course and mortality, and in the achieved clinical results have become apparent in these cases. Since the addition of a third "tail" to a central pericardial mass, a more accurate application of the graft to obliterate the concavity of the mural leaflet has become feasible.

PRESENT SURGICAL TECHNIQUE

The patient is studied and prepared in the same manner as in other cases for mitral surgery. Since 71.3 per cent of these patients have chronic atrial fibrillation, nearly all will be on full digitalization prior to surgery. After full compensation has been established and improvement has reached a maximum, the patient is brought to the operating room and is



Figure 7. Modified mitral suturing instrument (open).



Figure 8. Modified mitral suturing instrument (closed).

anesthetized in the usual manner. This is the combination program of the intravenous pentothal and procaine and endotracheal oxygen, which has been described by Keown and associates.[8]

The patient is placed in the true lateral position with the left side up. The usual curved posterolateral incision is made beginning in the midclavicular line below the breast, and extending up posteriorly to the level of the spine of the scapula.

The fourth intercostal space is opened from the internal mammary vessels to the transverse processes of the vertebrae. The lung is compressed posteriorly. If there are pleural adhesions, the upper lobe is mobilized completely, but the lower is left adherent.

The pericardial sac is incised posteriorly and parallel to the left phrenic nerve from apex to base. The surface of the usually dilated left atrium is palpated to detect the pathognomonic systolic thrill of mitral insufficiency. Occasionally, however, it is absent even when a significant degree of regurgitation exists.

The distal portion of the usually greatly dilated left auricular appendage is encircled with a purse-string suture. This is incorporated within a Rumel-Blemont tourniquet. The appendage is clamped off and the terminal end is incised for a distance of 2 cms. Its cavity is flushed with saline. The tip of the index finger of the glove is removed and the operator's bare finger tip is inserted between the lips of the opening. As the occluding clamp is removed, the finger is passed well into the left atrium, hemostasis being provided by tension on the purse string.

The valve is immediately sought, and its structure is explored. The existence and relative amount of the insufficiency are estimated from the size and character of the regurgitant jet. The size of the valve orifice, the presence and type of any coexistent mitral stenosis, the localization of the jet with relation to the valve commissures, and the flexibility of the leaflets must be carefully estimated. The presence of any calcification and its amount and character are determined.

After a thorough exploration of the valve, the operator will have an idea of the type and extent of the insufficiency, the necessity and probable success of cor-

rective surgical measures, and the advisability or necessity of an attempt at preliminary commissurotomy. If the latter is required, it is performed at once in order to enlarge the valve opening and to improve its functioning. Sometimes, a properly performed commissurotomy alone is all that is necessary to restore a considerable degree of valve competence. In these individuals, no further corrective surgery is indicated.

However, in most instances the insufficiency will persist after the performance of the commissurotomy. Then, the operator may gently insert his finger tip into the incompetent portion of the opening to determine whether there is a relative or actual lack of valvular tissue posteriorly or elsewhere. In many cases, the cross sectional area of the finger tip will add sufficiently to the "substance" of the valve to restore competence without seriously blocking the size of the aperture during diastole. This phenomenon is dependent upon the existence of a functioning septal leaflet.

In certain cases, one leaflet (usually the mural) will be determined to be suspended at a higher level than the other. This unequal tendinous suspension of the two leaflets indicates the advisability of placement of an "artificial" papillary suspension as previously described (Fig. 5.) Depression of the higher leaflet with the finger tip will usually restore full compensation (Fig. 9).

In most cases, the leak will be found to be located posteriorly and one of the forms of direct suture repair of the incompetent posterior commissural region (commissurorrhaphy) will be deemed advisable if it is over two plus in magnitude. Having estimated, with the finger, the amount of the lack of valvular substance, the finger is removed from the heart and the appendage is clamped.



Figure 9. Depression of a higher leaflet with the index finger, bringing the edges of the valve into apposition.

A full length broad strip of the pericardial sac is removed from the region anterior to the left phrenic nerve. Great care is taken to control any bleeding from the remaining cut edges or from the dissected mediastinal tissues.

When the valve is unusually flexible, when the orifice is large, and when there appears to be an adequate quantity of valvular tissue for suture approximation without tension, a 3 cm. wide strip of pericardium is obtained to be used as a simple approximating suture between the valve edges making up the posterior peripheral segment of the orifice. Both ends are cut in tapering fashion and an "eye" is created in one end (Fig. 10).

When it is felt that, because of an actual or relative lack of valvular substance, there is a necessity for the application of additional living substance to the posterior incompetent portion of the valve, provision is made for it in either of the following two ways. If the pericardial strip is deemed to be sufficiently long, it is trimmed so that it is 3 cms. wide throughout its length except in the very middle portion, where all excessive pericardial tissue is maintained attached. This is rolled or folded about the central axis of the strip in such a way as to create a mass of pericardial tissue 2 to 3 cms. long, and perhaps as thick as a man's finger. This is to be placed on the ventricular aspect of the valve in its incompetent portion. Since it will swell initially and shrink eventually, considerable care should be devoted to creating the correct size of the mass or "plug". The shape is definitely established by the application of securing sutures of fine arterial silk. Both extremities of the pericardial strip are bevelled.

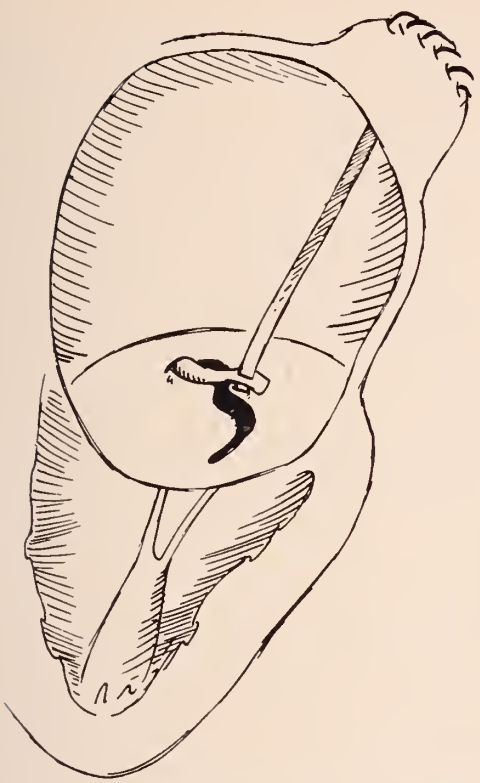


Figure 10 A "noose", using a strip of pericardium for suture, in position at the posteromedial commissure, the free end sutured to the atrial appendage.

On the other hand, if the length of the available pericardial ribbon seems short in comparison with the size of the left atrium, it may be simply trimmed to a 3 cm. width with tapering extremities and an "eye" in one end. Then, an additional strip may be "impaled" upon the tapered one by passing the latter through each of a longitudinal row of openings made in the former one. This produced an "accordian-pleated" mass which can slide freely upon the tapering strip.

Now, having prepared a suitable "pericardial suture", the bare right index finger is returned to the left atrial chamber. The left-sided "mitral stitcher" is threaded with a heavy nylon suture (#2) and is inserted into the heart by passage along the index finger and under the anterior lip of the incised auricular appendage. The open instrument is applied to the free margin of the valve orifice in such a way that the suture-bearing "beak" is engaged beneath the mural leaflet. When simple suture obliteration of the posterior incompetent segment of the valve is all that is intended, the beak is placed at a point two-thirds of the distance from the anterior commissure to the posterior (junction of the posterior and middle thirds). When it is intended to apply additional substance to the valve, the site of mural leaflet penetration is selected as that point where the leaflet retraction begins to become apparent. This will usually be about at the midpoint in the length of this leaflet.

Having placed the beak properly under the leaflet, the ends of the nylon suture are held under slight tension and the spear-like sliding blade is advanced by pressure of the thumb of the operator's left hand. It pierces the valve substance creating a 3 mm. long slit and engages the nylon suture held in the beak within the slotted groove on its outer edge.

By backward traction upon the sliding blade, a loop of nylon suture is drawn up into its sheath and finally well out of the heart (at least 8 to 10 cm. out of the instrument). The sliding blade is detached from the suture loop, and the instrument is disengaged from the valve and removed from the heart. One loop of nylon suture and two free ends now emerge from the opening in the left auricular appendage. The former emerges from the atrial aspect of the mural leaflet of the valve while the latter traverse the valve orifice to penetrate the ventricular aspect of the mural leaflet. Each of these three suture ends is fixed *without tension* to the drapes by fine hemostats.

Now, if the posterior peripheral valve segment is merely to be sutured closed, the threaded right-sided "stitcher" is inserted into the heart and a similar nylon suture is placed at the selected point (somewhat more posteriorly than at the junction of the posterior and middle thirds) in the substance of the septal leaflet. The loop and ends are brought out of the appendage in similar fashion. Such cases will be those with very large valve orifices, and

some of them may also require the placement of a second more posteriorly located approximating suture.

When the over-all valve size is less adequate and when one only desires to add extra living tissue to the retracted mural leaflet, the left-sided stitcher is rethreaded and re-applied. This time it is inserted into the left atrium along the intracardiac finger which is held in a pronated position, taking care not to entangle with the previously placed nylon sutures. The "beak" is engaged under the posterior commissural tissue in such a way as to be assured that the graft tissue mass will be well applied to the contracted concave free margin of the mural leaflet. The sliding blade is driven forward penetrating the commissural tissue and engaging the suture loop which is then drawn out of the heart. The remainder of the instrument is disengaged from the valve and withdrawn. Again, the loop and two ends of nylon emerge from the appendage and are tacked down without tension to the available wound drapes to avoid entanglement and subsequent confusion. (Fig. 11a, b, c, d, e, f)

Now, the tapering extremities of the pericardial strip are attached to two nylon ends which pierce opposite valve leaflets (or the mural leaflet and the commissural tissue).

Traction is now cautiously made upon the appropriate sides of the two nylon loops until the free ends attached to the pericardial strip become drawn into the heart.

The traction must never be forceful and undue tension must never be permitted lest the valve leaflets become "sawed through." Judicious release of the purse-string tension and appropriate manipulations of the intracardiac finger aid greatly in the application of the graft.

If the heart action becomes weak at any time, it is probably related to temporary aggravation of the insufficiency by distortion of the valve by the traction. It can be alleviated by release of the traction and by placement of the finger tip into the incompetent portion of the valve ori-

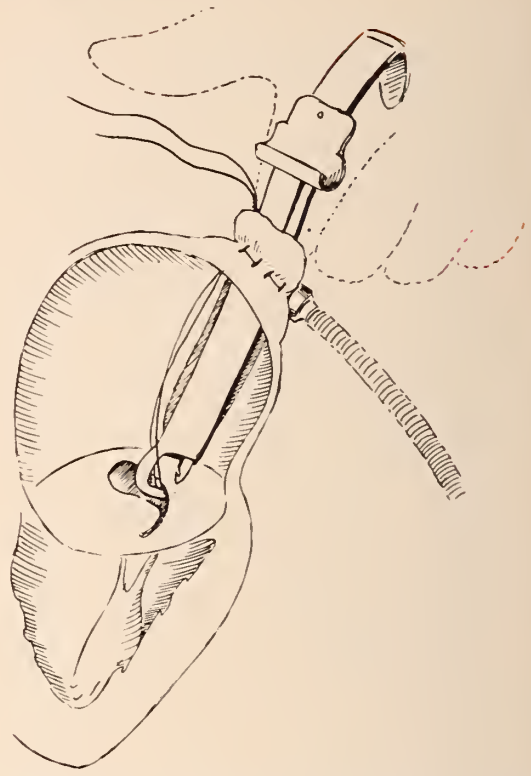


Figure 11. (a) Suturing instrument engaged upon mural leaflet at anterior extent of the leak.

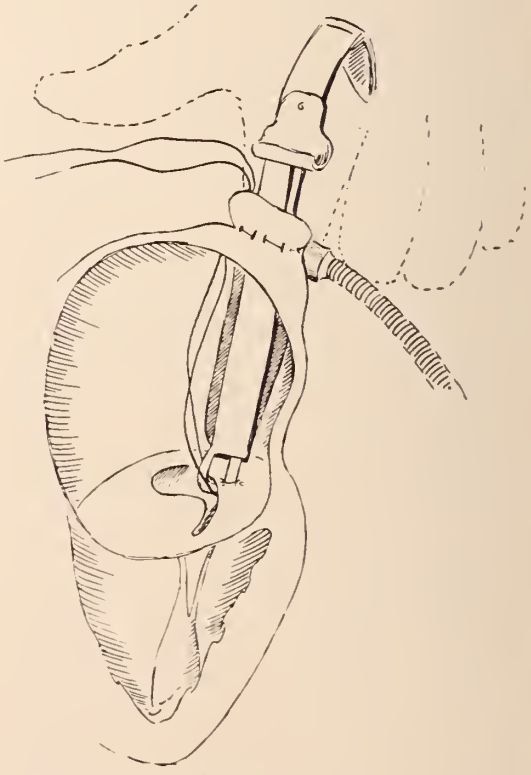
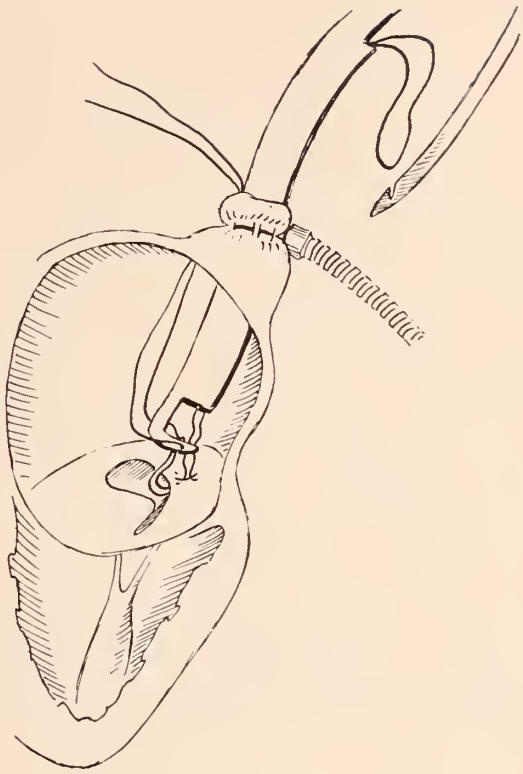


Figure 11. (b) Valve punctured and suture picked up by sliding blade.

fice to improve its function until full vigor is restored.

Finally, the pericardial ends will reach the puncture sites in the valve from the ventricular aspect. They may meet with considerable resistance to further passage because of the smallness of the perforations. However, if the entire graft is inserted into the left atrial chamber, to reduce external friction drag, and if the nylon suture is pulled successively in different directions (cephalad, caudad, anterior, and posterior) with a release of tension between each change of direction, the tapered nylon ends will soon emerge from the heart and the graft will be in place (Fig. 12 a, b, c, d).

If the type and size of the graft have been properly selected and placement has been accurate, the regurgitation should be nearly completely abolished at once, especially if gentle traction is made upon the nylon ends. This may be made permanent by passing the intact tapered end of the suture through the previously made "eye" of the other extremity in the case



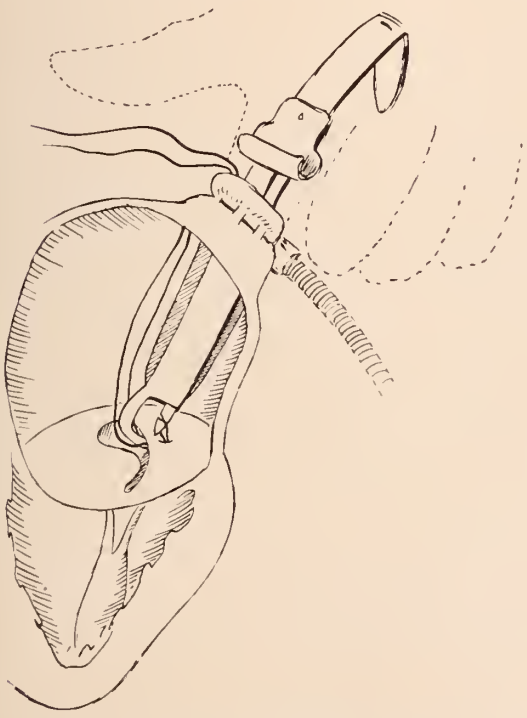


Figure 11. (c) Sliding blade retracted bringing loop up through the valve leaflet.

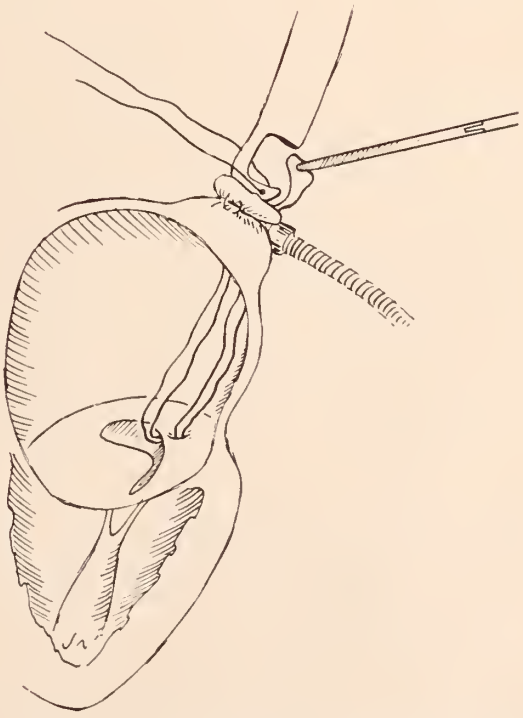


Figure 11. (d and e) Both blades removed from heart.

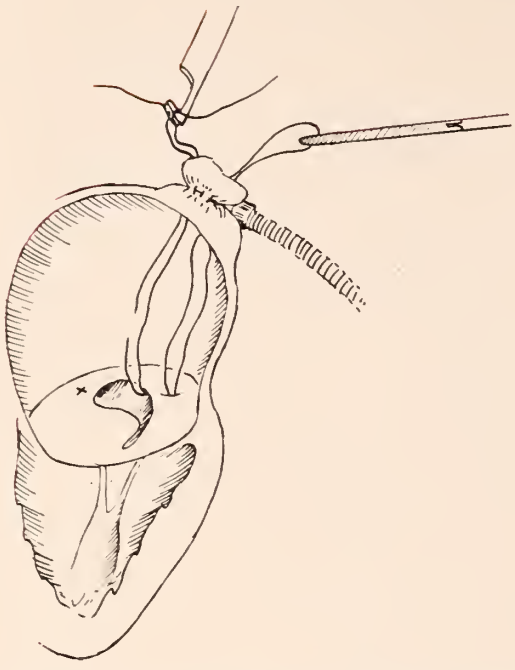


Figure 11. (f) Free ends of suture material protruding from atrial appendage. Site of placement of the suture into the anterior leaflet is indicated.

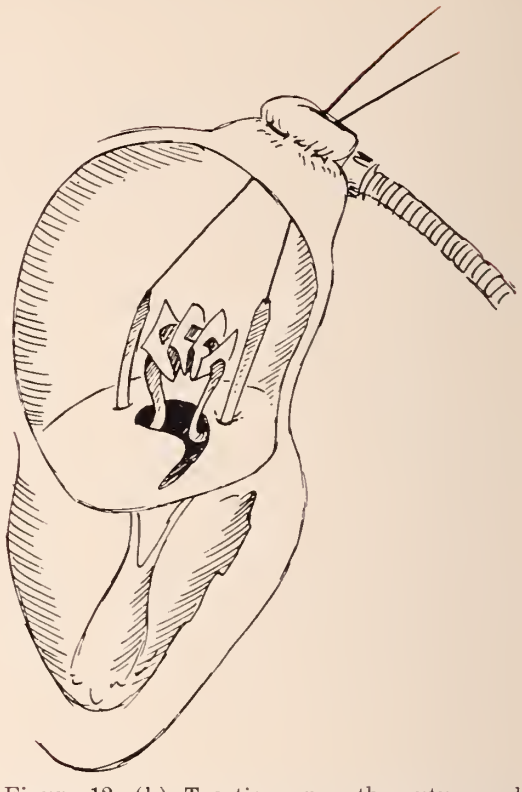


Figure 12. (b) Traction upon the suture pulls the pericardial strip and impaled mass into the atrium.

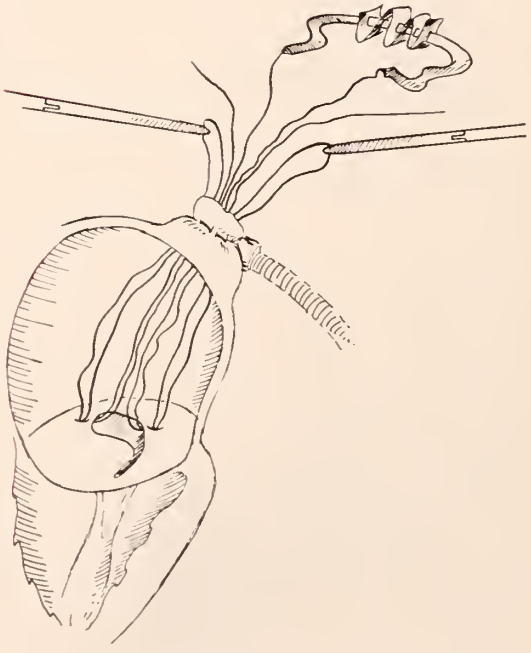


Figure 12. (a) Pericardial suture attached to free end of the protruding suture and "impaled" mass of pericardium in position at the central portion of the pericardial suture.

of the simple approximating suture or the suture with an impaled mass. The fine suture loop which had been placed in the substance of this "impaled" mass to prevent its possible loss into the blood stream in the event that a nylon suture should have become separated from a pericardial end, is now cut and removed. In the case of the central rolled pericardial mass, no noose technique is possible and both pericardial ends must continue to emerge from the appendage. With the latter type of graft, a third pericardial suture may have been added and brought out through the substance of the mural leaflet midway between the other two perforations. This secures a more accurate and effective application to the edge of the mural leaflet (Fig. 13 a, b).

The mitral insufficiency having been largely or completely corrected, as indicated by the lessening or abolition of the regurgitant jet, and an adequate residual valve orifice having been obtained, the

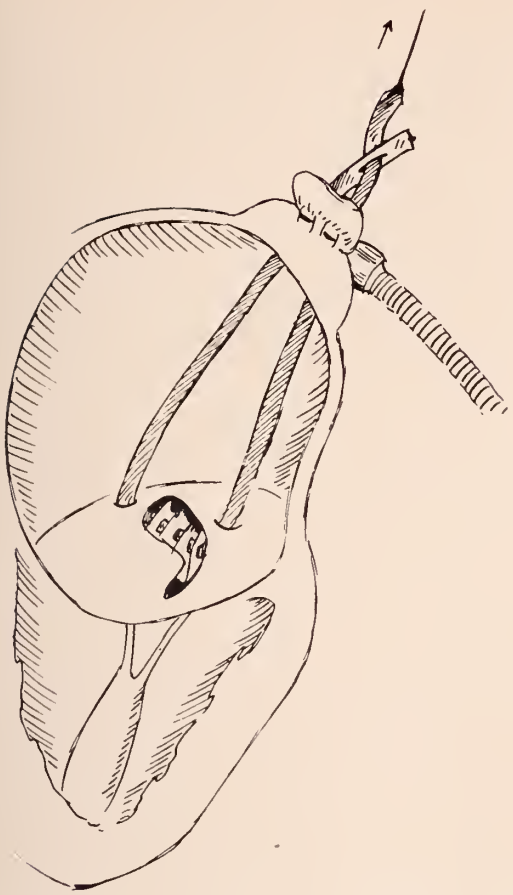


Figure 12. (c) One end of pericardial suture passed through an "eyelet".

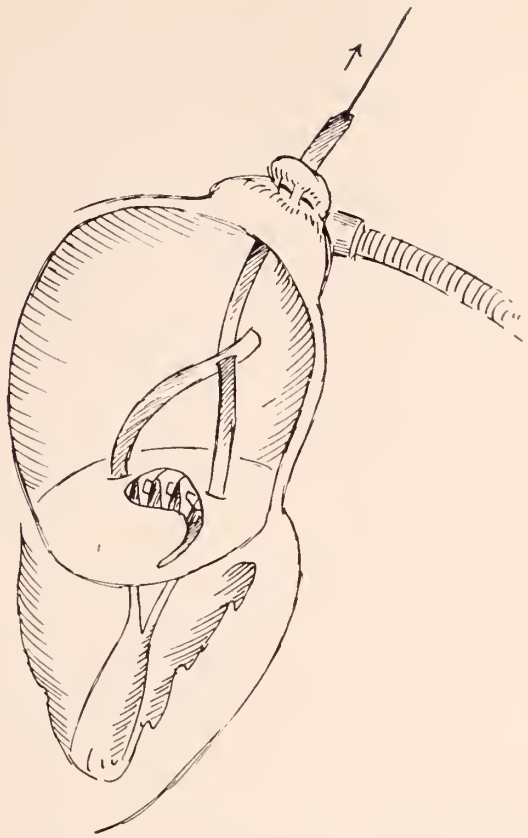


Figure 12. (d) Traction upon the free end of the pericardium tightens the loop.

procedure is terminated. The finger is withdrawn from the heart and the appendageal stump is ligated and oversewn. The oversewing sutures are carefully guided through the substance of the emerging pericardial end or ends. No great tension is applied to them.

Chest wall closure is routine, using simple waterseal drainage through a fenestrated #26 urethral catheter inserted through a stab wound in the left eighth intercostal space, posterior axillary line.

CONCLUSIONS

Significant mitral insufficiency either alone or in combination with other valvular lesions invokes a definite burden on the heart and as such justifies surgical attempts to correct the defect.

Earlier techniques utilizing a transventricular sling or hammock in order to occlude the incompetent valve orifice were attended by a high mortality (38 per cent). Later procedures such as the transventricular suture of the mitral valve leaflet, and the presently used intracardiac suturing by way of a transauricular approach have decreased the mortality to 21 per cent. Additional modifications will undoubtedly further improve the results and will make them comparable to those achieved with other forms of mitral valve surgery.

SUMMARY

1. Mitral insufficiency in well developed form is one of the two most devastating acquired valve lesions.

2. A functional and a pathological classification of this condition has been given.

3. An anatomical and pathological explanation of the two most common types of serious insufficiency is given. Its char-

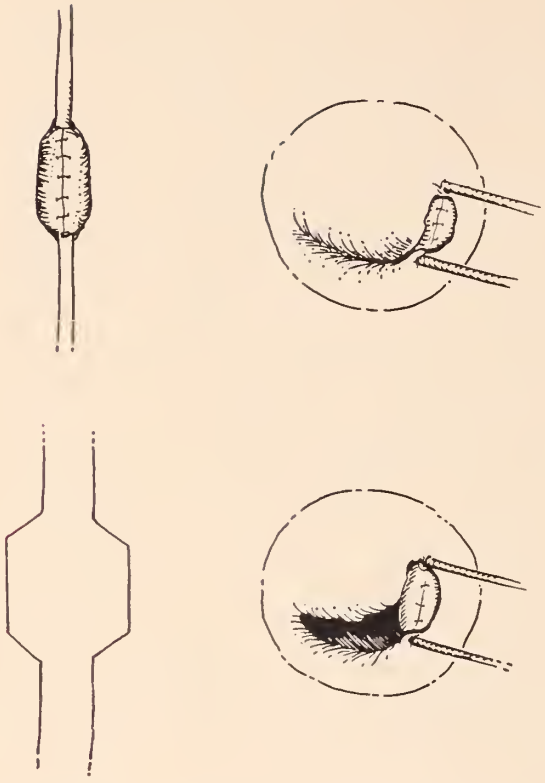


Figure 13. (a) The pericardial strip is cut so that a central rolled pericardial mass may be used to traverse a defect at the posterior commissure. Diagram shows the incompetent posterior commissure occluded with the valve closed and open.

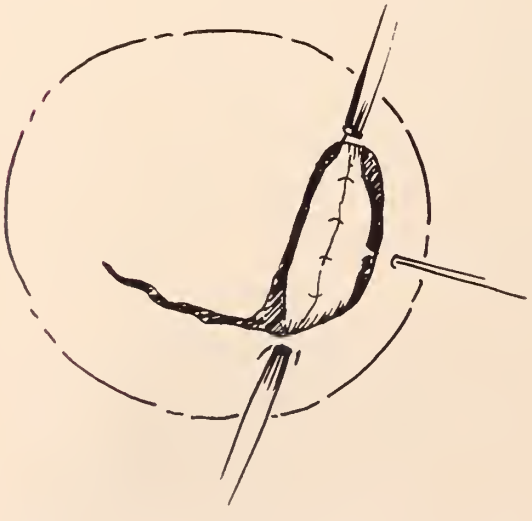


Figure 13. (b) A third suture may be necessary to hold the pericardial mass into its proper position in the posterior commissural defect.

acteristic posterior localization is pointed out and explained.

4. The various types of commissurorrhaphy and their basic underlying principles are detailed.

5. The disadvantages and dangers of the transventricular methods of valvular suturing are clarified.

6. The use of the "mitral stitcher" for valvular suturing by the transatrial approach is indicated and the technique is described.

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ALLERGY IN GENERAL PRACTICE *

J. P. SANDERS, M. D.
SHREVEPORT

In the author's opinion, the practice of allergy as a specialty is probably the least exact of all the specialty groupings. There are more variable factors, less exact knowledge generally known, and far too many conditions that can never be properly evaluated. While the study of allergy is advancing rapidly, capable men all over the world are making constant comparisons, constant surveys, and doing constant research. But still so many variables occur that allergy for the general practitioner, as well as for the specialist, seems many times to be an inexact science. If the author seems uncertain in many of the statements made in this paper, it is

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 22, 1954, in New Orleans.

because that uncertainty actually exists in the practice of allergy, or seems to exist, in the mind of the author himself.

The general practitioner is the first line of defense in treating allergic conditions. Since allergy is on the increase, or at least seems to be, in the past few years, it behooves the family physician more than ever to be up to date in his recognition of the disease in its care and treatment.

In a great many cases, the family physician brings the baby into the world, takes care of it through its infancy and childhood, and carries it on into adult life. Frequently, he is consulted by the mother for the baby's colic, the diaper rash, and other allergic manifestations which may become apparent in the infant. As these manifestations change, the patient develops into an asthmatic or hayfever patient. It is the family doctor usually who has to take care of this allergy. The over-all care includes the diet, frequently a balanced allergic room, and other factors that influence the youngster's life.

Finally, if the manifestations become too severe, the attacks too frequent, and the over-all care too demanding for the general practitioner, it is he who picks out the specialist to make an allergic survey and plan the continued treatment. If the patient has to take extracts or other shots, the family doctor is usually the one who has to give them. In any case, he assists the specialist in looking after the over-all care and general treatment of the allergic individual.

A well trained general practitioner must have a good working knowledge of allergy. Diagnosis is all-important. Patients who come in with an allergic background should have thorough histories. Since approximately 80 per cent of the population have a minor allergy and 10 per cent a major allergy, it is very important to get this information in the patient's history. Even though his allergy may vary from that of his father or mother, it is always important to know what their allergies are, whether or not they are severe, how frequently they occur, and what treatment seems to relieve them. In taking a history, it is important to find out when the patient's allergy appeared, estimate its severity, frequency of recurrence, and the type of manifestation the present allergy takes. For example, it is very important to know whether the patient is an asthmatic or has hayfever; whether he is in anaphylactic shock; or whether he has angioneurotic edema or nettle rash. Contact dermatitis, eczema and other manifestations should be clearly defined in the general practitioner's mind. We must, by all means, be able to differentiate between an allergy and other diseases of a similar nature. Frequently, this is not easy. It can be done only after a thorough history is taken, a complete physical examination of the patient has been accomplished, and other pertinent information obtained. Here again, the family history and the patient's background are important. For example, an asthmatic may be either bronchial or cardiac. If he gives a history of the attack coming on after exertion, we suspect the heart. Whereas, if the attacks have occurred since adolescence, we suspect the bronchi.

Ordinarily, the over-all care of the patient is the job of the family doctor. He has to see that the patient lives in a non-allergic atmosphere. The home should be free of dust or other allergens to which the patient might be sensitive. If the patient has symptoms while he is at his office or his place of business, then it is usually the general practitioner who has to survey that place of work and determine what factors are causing the patient's symptoms. He actually may have to decide what sort of a vacation the patient may take, where he must travel, what foods to avoid, what pollens to stay away from, and other things that may affect the over-all allergic care. It is inadvisable to send a patient away from his home environment thinking that his allergic condition will improve in other surroundings. In many cases, the reverse is true. His allergic condition may actually become worse. All of us have seen

this happen in many cases after the patient has gone to a considerable amount of trouble and expense in moving to what he called a "higher and drier climate." One of my patients found that he was completely relieved when he visited Galveston, only to have the symptoms return when he came back home.

Unless the general practitioner has had special training, it is probably unwise for him to prescribe extracts or other materials for desensitizing the patient to any allergen. These extracts may be dangerous, frequently have to be given in very small quantities for a period of time, and gradually increased as the patient becomes desensitized. The general practitioner will frequently be called upon to administer the extracts after the allergist has prescribed them.

A considerable amount of work has been done recently in using antihistamines along with desensitizing extracts to prevent untoward effects and make it possible for the patient to receive much larger doses of the allergen and thereby hasten the desensitizing process. For instance, the manufacturers of Chlortrimeton strongly recommend the addition of small amounts of this drug in the same syringe with the allergens. They have definitely demonstrated that larger quantities of the allergen can be given by this method than otherwise. Histadyl (thenylpyramine),* has been found to lower the percentage of transfusion reactions when used prophylactically before the blood is administered.

In the author's opinion, the educational training the patient receives is probably the most important of the whole allergic regime. Cooperation of the patient is obviously important. Unless he believes in it, will attempt to carry out the doctor's orders, and otherwise submit to the changed regime, the improvement or cure is very problematic. I think that the patient has to be told that the disease is chronic, that any treatment will have to be carried out over a long period of time, and that it is expensive in time, money, and effort, but the end results are worthwhile. Psychosomatic medicine certainly becomes important when the physician sells his patient the idea to continue. In my experience, the uncooperative patients have been those who have gotten the least help. They have either found that the treatment was too long-drawn-out, that it cost too much, or that it was just simply too much trouble to try to continue. Therefore, they would relapse, possibly get worse, and many of them drift on to some other physician. If the "quacks" had anything to offer these poor individuals, they would certainly be over-run with patients.

One of the reasons for the difficulty in handling an allergic patient is that he may have two or more manifestations of the same disease. Again, he is frequently sensitive to many allergens, a few of which are causing his trouble, the others being unimportant. All of these tend to confuse the physician and make it all the more difficult to put the patient on a regime that will keep him symptom-free. For example, I recall a patient a few years ago who came to me (or went elsewhere) for a complete testing every two years. At the end of the testing, he paid his bill promptly, thanked us for the efforts, and went his way. We neither saw nor heard from him for another two years. During all this time, he was symptom-free, and his argument was that the testing alone had cured his symptoms, and that two years relief was entirely satisfactory for the amount of money he paid out. At the end of that time, another set of tests would again completely free him of all his symptoms. This regime had gone on for about fourteen years, with a set of scratch tests each two years during that period of time.

Frequently, in the care of the patient, we have two problems. First, the emergency relief of the symptoms presently manifested; second, corrective measures for the prevention of the disease. Many times we will use measures for emergency care that are of little value in the prevention of symptoms. For example, adrenalin

* Put up by Eli Lilly & Company.

may relieve a severe asthmatic attack, but be worthless in preventing another attack.

TESTING

Testing is important to both the general practitioner and the specialist. It is inconceivable that we can ever find out what a person is allergic to unless some sort of test is tried. There are all sorts of methods of testing. These include: the intra-occular, the scratch, the intradermal, the patch, the inhalation, the ingestion, and the passive transfers. Each has its advantages and its disadvantages. For example, the intra-occular tests for one or two allergens are fine. It is easy to put a drop of the allergen in the corner of the eye and to watch for five or ten minutes for any positive reaction. Redness of the conjunctiva, enlargement of the blood vessels, and edema, each indicates a positive reaction, and the severity is clearly demonstrated. But it is impracticable to do many intra-occular tests.

Scratch Test—This is easy to do and has the advantage that most any portion of the body may be utilized. The scratch should not be over one-fourth inch long, should not penetrate the dermis, and should not bring forth blood. The allergen must be deposited in the scratch. There is always the danger of infection. There is some danger of administering an overdose of the allergen to the patient.

Intra-dermal Test is similar to the scratch test, and has practically all the advantages and disadvantages of the scratch test; .02 cc. of a specially prepared allergen is usually sufficient for one test and should be injected just underneath the epidermis, and compared with a control. Larger amounts of the testing allergen should not be administered lest a false positive be produced. Lesser amounts might give false negatives.

Patch Test is one of the most common carried out. It can be done with a small amount of material placed on a piece of sterile gauze, moistened sufficiently to adhere to the skin and the patch attached to the skin for a period of twenty-four to forty-eight hours. It has the advantage of being amenable to most any surface and can be repeated without danger or difficulty to the patient.

These three—the scratch, the intradermal, and the patch tests must be applied to the skin where no allergy is present.

In all cases of allergic sufferers, we run the risk of throwing the patient into an attack and should have adrenalin ready at all times in case of the emergency.

Testing by *inhalation* is limited, of course, to volatile materials. The patient has to depend upon his own sensitivity to determine the reactions.

Swallowing is another method of testing. It is frequently unreliable due to the fact that foods are usually consumed in combinations. The patient rarely takes one food alone. The reaction depends so much upon the amount of the food taken, the length of time after the ingestion of the material, and other factors such as temperature, humidity and environment.

All in all, no one doing allergy can get along without some sort of testing. Usually it should be done by the specialist and the results transmitted to the general practitioner. In either case, a large variety of testing material will have to be available. Most allergists have come to the conclusion that a few tests are insufficient, are misleading, and give the physician and the patient a false sense of security with regard to his re-activity. Some physicians still make up their own allergens and extracts, while others acquire these from one of the reputable allergen manufacturers. Constant vigilance to see that the allergens are of proper strength, are not out of date, are not contaminated, and are otherwise acceptable for use, is necessary in order to do good work.

Block testing, which is frowned upon by some, has one definite advantage. It eliminates some of the pain for the patient. If one block of seven substances is negative, then it is not necessary to test that patient for those seven substances. Each physician doing allergy has to determine for himself what test he will want to use.

Passive transfers is another method for testing. It consists of withdrawing blood from a small child (or a larger patient, unable to be tested) and injecting the serum into a non-allergic individual. The testing is carried out around the site of the serum injection, at a one- or two-week later interval. This has the disadvantages of requiring a "passive transfer", the injection of this second individual, and the delay in the allergic survey. It has the advantage, of course, of making testing available to small children and other individuals whose rash or other allergic conditions make testing impossible or inadvisable.

PRACTICAL MANAGEMENT OF THE ALLERGIC PATIENT

This is important from the patient's viewpoint, whether done by the specialist or by the general practitioner. It would depend, of course, upon whether or not the symptoms are constant or seasonal. If we find that symptoms occur only in the spring, we think of the pollenation of flowers, grasses, trees, etc., as being the offenders. Where hayfever appears in the autumn, we usually think of ragweed or one of the fall grasses. A constant manifestation usually calls our attention to foods or to surroundings. A patient who is sensitive to wheat is going to have his allergy when he eats flour or any other food containing wheat products. A person who is sensitive to house dust will usually have his allergy wherever he runs into dust, whether at home, in his office, in his automobile, or any other place.

The time of recurrence is important. A lawyer patient of mine found that he was perfectly free of symptoms as long as he was in his office on the fifteenth floor, but when he drove out to his home in the evening, he immediately choked up with hayfever. At first, it was mild, and later severe, particularly when he was in his own yard, around his own shrubbery.

It is important to know whether the patient's condition incapacitates him sufficiently to hamper his job or is only of nuisance value when he is off his job. For example, a four-year-old patient of mine gets hayfever every night when she gets into bed with her father. We found that this was avoided if she slept in her own bed, in her own room. The fact that she was allergic to his pajamas, his bath powder, or his bed covers is of no economic value. Its nuisance value is important. But in other cases, we find that allergy frequently affects his money-making capacity, incapacitates him from carrying on a job properly, and otherwise interferes with his everyday family life.

Women who are sensitive to cosmetics may find it difficult to attend Sunday School and Church, or other social gatherings. The place of vacations may be determined by the vegetation there. A man who is fond of animals will certainly not do cattle-raising as an avocation if he is sensitive to cow hair. The place in which to live may be determined many times by the pollen bearing plants around the house. A patient may be perfectly willing to cut down the shrubbery around his own place, but could not expect his neighbor to destroy shrubbery that he spent a lifetime accumulating. Even a change of jobs is sometimes necessary to get in a balanced allergic environment. I had a patient once who had asthma constantly while she was in Shreveport, but had no attacks while with her sister and brother in Atlanta, Georgia for two years. It was not difficult to convince her where she should live.

THE ANTIHISTAMINES

The value of the antihistamine varies with the type of allergy the individual has, the length of time he has had the disease, and many other factors. It seems that every time we see a drug representative, his company has produced another antihistamine. The very fact that there are so many of them probably proves that they have some value in some cases, but are worthless in others. A sales representative told me recently that his company had just produced the eightieth antihistamine; that while there were seventy-nine already on the market, there was still need for another, all of which probably proves my previous assertion that each is

of some value in some cases, but of little value in others.

The eczemas are probably the hardest of the allergies to treat. When an optimistic salesman brags a little too much on his own product, I immediately ask him what it will do for an eczema. Usually he reluctantly admits the drug is worthless in eczemas. Asthma and hayfever usually respond most readily to the antihistamines.

In looking back over the antihistamines that have stayed with us and are still used by many physicians, we find that the list includes adrenalin, ephedrine, propadrine, benedryl, pyribenzamine, histadyl, and a few others. Combinations of these are sometimes of more value than either one. For example: ephedrine with amytal has been a favorite for many, many years, and is better than either alone. Adrenalin in a 1/1000 solution, adrenalin in oil, and adrenalin in glucose, 1/1,000,000 solution (IV) are very effective in asthma, hayfever and some of the dermatoses. Infusions of ephedrine, histadyl and other antihistamines may be very effective.

THE WONDER DRUGS

ACTH, cortisone and hydrocortisone were the wonder drugs developed originally for the treatment of rheumatoid arthritis. From this disease, their use has spread out through the whole gamut of human ailments, including the allergies. I think that most of us find that the same cautious use of either ACTH or cortisone in the case of asthma or some of the other allergies is justified. Certainly, when a child comes into our offices with a severe case of asthma or rash and has responded to no other treatment, we find that ACTH and cortisone will relieve the patient quickly and give us a greater opportunity to further study his allergic manifestations. Sometimes we find that the allergy has a secondary invader, and the addition of antibiotics is desirable. The dangerous side effects of these drugs, of course, have to be watched. The Cushing syndrome with its "moon-face" edema of the tissues, and the tendency toward diabetes itself is always a dangerous factor. All in all, while the wonder drugs are a big addition to our armentarium, they are not the final answer to the problems of allergy.

CONCLUSION

In conclusion, the general practitioner and the specialist in allergy must first work as a team if the patient is to get the best medical care. Second, the general practitioner must keep in constant training, and study constantly if he is to maintain an intelligent attitude towards allergic diseases. Changing methods and changing times have to be reckoned with, and he must not be "the last to lay the old aside." In other words, the general practitioner must keep up his basic training if he is to be of the greatest value to his allergic patients.

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RHEUMATISM RESEMBLING RHEUMATOID ARTHRITIS *

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The early manifestations of rheumatoid arthritis are so similar to those of a number of other musculoskeletal conditions that it may often be mistakenly diagnosed for one of these other less serious conditions. Since many of these latter diseases are more amenable to treatment than is rheumatoid arthritis, the physician must be certain that he has considered all other possible diseases which may mimic rheumatoid arthritis before he definitely makes such a diagnosis.

The cardinal symptom most frequently associated with rheumatoid arthritis is acute articular swelling, which is neither traumatic nor infectious. Other conditions which can in part mimic this condition include the shoulder-hand syndrome, hypertrophic pulmonary osteoarthropathy,

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gout, and combined osteo and traumatic arthritis. Serum sickness, paralysis agitans and "hypercortisonism" in patients with rheumatoid arthritis also have features which should be considered in this discussion.

SHOULDER HAND SYNDROME

The shoulder hand syndrome is a distinct clinical entity,[1] which is easy to recognize when fully developed. However, its varying manifestations, especially during the early stage, often make the differential diagnosis difficult.

Etiology: The onset may be characterized by symptoms referable to the shoulder, hand, or both, which may appear without apparent cause. It has been frequently reported after myocardial infarction, and may appear one week to six months after an attack of coronary occlusion. It has also been reported after hemiplegia, splinting of a fractured arm, manipulation of a shoulder, and abdominal operations.[2] I have seen several typical cases associated with severe emotional disturbances and following recent thoracic operations. Coventry[3] considered the syndrome to be a form of periarthritis characterized basically by pain, disuse, and the "pre-arthritic personality." The most striking feature of this personality is a passive apathetic attitude in a person with a low pain threshold and hypersensitive musculature. Usually their attitude is "I can't," "I've tried," or "It's too painful to move the arm." My impression is that this personality has not been characteristic in the patients in whom the syndrome developed after thoracic operations.

The first *clinical manifestation* may be a severe ache or burning pain in the shoulder which may become intense in a matter of a few days. The initial discomfort may be accompanied or followed by stiffness. Immediately, or usually within a few days or weeks, this pain extends down the arm into the elbow, forearm, and hand. Motion in the shoulder is usually restricted from the onset, and the patient soon recognizes a comfortable range of motion for the shoulder and extremity which he does not exceed by choice of movements.

Either initially or as the discomfort extends down the extremity, the entire hand, including the fingers, becomes uniformly swollen, red or cyanotic, and the fingers assume a partially flexed position. The fingers have been said to look like sausages. There is no tendency to spindling or fusiform swelling of the proximal interphalangeal joints. The hand may be moist and warm. Although the patient can shake hands, he does not do so with a firm clasp and the hand feels "woody." The subcutaneous tissue is indurated and sore, and nodules can be felt in the palm. Motion of the fingers or wrist is limited because of pain and the patient cannot completely close the fist. Characteristically, the joints are no more sensitive to pressure than other parts of the hand or fingers. With increasing pain the hand is guarded and the patient will even move it about with the opposite hand.

This acute or subacute involvement of the hand may continue for three to six months; whereas the discomfort in both the shoulder and hand may extend over a period of six to twelve months.

The acute stage may be brief, quickly passing into a subacute phase characterized by continued induration and slight swelling, and pain usually with motion or at night. This may exist for several months and is often the time when the patient is told he has "arthritis" and is subjected to the still too often futile practice of dental extractions, tonsillectomy, and search for foci of infection.

The chronic stage is manifested by residual stiffness of the shoulder and fingers of the hand. The fingers feel tight and are in a flexed position. The subcutaneous structures are firm and nodular, and fibrosis of the palm is prominent. The range of motion of the hand and shoulder is limited but probably comfortable within this range.

Roentgenograms made during the acute and subacute stages show soft tissue swelling, possibly along with some mild osteo-

arthritis of the interphalangeal joints. In the later stages osteoporosis is common.

Differentiation: The shoulder-hand syndrome differs from rheumatoid arthritis in several ways. These patients often give a history of coronary occlusion or some other associated precipitating factor. Moreover, they do not complain of the general fatigue characteristic of rheumatoid arthritis, and the joints of the hand are not any more uncomfortable than the adjoining structures. Finally, the resulting deformities of the two conditions are not similar and articular damage and narrowing are not demonstrable roentgenographically in the patient with the shoulder-hand syndrome.

No *treatment* has been successful in all cases. Best results have been obtained in cases recognized and treated early. Coventry [3] and Steinbrocker and associates [4] reported beneficial results from cortisone and ACTH, especially if administered early before fibrosis occurs. Whereas the latter authors considered as much as 200 mg. of cortisone or 100 mg. of ACTH necessary daily, Coventry reported favorable results from smaller doses. Smaller doses could be tried initially and the amount increased if necessary.

Suprascapular blocks with or without stellate ganglion blocks have relieved pain and swelling and have increased the range of motion in several of my patients. Jespersen [5] reported improvement following stellate ganglion block in 10 out of 16 patients.

As disuse of the shoulder results in further periarthritis of that joint, motion of the involved extremity is essential. These patients usually require the help of an understanding physical therapist, for if left to their own initiative, they will benefit only partially from exercise and this partial improvement will give them a false sense of security. The therapist must assist the patient with motions of the involved joints and teach him to move the extremity as much as possible.

Local applications of heat may temporarily facilitate the exercise. Diathermy may cause additional reflex stimuli, and moreover has no advantage in such cases. Splinting of the involved hand may provide temporary relief.

HYPERTROPHIC PULMONARY OSTEOARTHROPATHY

Carcinoma of the lung associated with acute hypertrophic pulmonary osteoarthropathy can simulate rheumatoid arthritis. Hansen,[6] and more recently, Jarvinen and Knumlin [7] reported articular symptoms resembling rheumatoid arthritis in patients with carcinoma of the lung. Craig,[8] Alvarez [9] and Pattison and associates [10] noted the frequency with which symptoms referable to the bones and joints precede the pulmonary symptoms. These patients usually seek medical aid because of the painful joint, most of whom are treated for rheumatoid arthritis before the primary pathologic condition is diagnosed.

Etiology: The cause of pulmonary osteoarthropathy and of the associated articular symptoms remains unknown. Reduced pulmonary aeration with low oxygen saturation has been suggested. Reduced oxygen tension in circulating blood of the extremities has also been considered to play a role in this phenomenon. These theories appear unlikely because often the pulmonary carcinoma is small and the articular symptoms will subside following pneumonectomy. Alleviation of articular symptoms following ligation of the pulmonary artery has been observed.[11] As in the shoulder-hand syndrome, it is assumed that reflex stimulation in the autonomic nervous system can result in articular swelling. On the basis of gynecomastia and acromegalic features in a representative number of patients with hypertrophic pulmonary osteoarthropathy Fried [12] suggested an endocrine factor.

The *clinical manifestations* consist in redness and swelling of the joints, increased warmth in the articular areas, and painful and limited motion of the joints. Fluid may be increased in the involved joint and this site is exquisitely tender. Bilateral symmetrical involvement is common in the large articulations. Atrophy and weakness of the small muscles of the

upper extremities may be noticeable. Hyperhidrosis of the hands and feet also occurs.

Differential Diagnosis: The foregoing are common manifestations of both rheumatoid arthritis and hypertrophic pulmonary osteoarthropathy. However, patients with cancer of the lung and hypertrophic pulmonary osteoarthropathy are usually between 50 and 60 years of age whereas those with rheumatoid arthritis are between 25 and 50 years of age. In the former group of patients the shafts of the long bones usually ache and are tender, a complaint not too common among patients with uncomplicated arthritis. Clubbing of the fingers may appear so late as to be of no aid in the initial differential diagnosis. When associated with chronic pulmonary suppuration and congenital heart disease it is usually painless; whereas it is usually painful in patients with osteoarthropathy associated with carcinoma of the lung. The presence of acromegalic features with or without gynecomastia would suggest articular changes associated with a pulmonary malignancy.

Laboratory studies do not aid in the differentiation of the two conditions. An elevated sedimentation rate, anemia, and leukocytosis may be found in both conditions.

Roentgenograms of the joint show soft tissue swelling, possibly some slight degree of osteoporosis in the articular ends of the bones and periosteal thickening of the adjoining bone which may be pronounced and irregular or serrated. Roentgenograms of the chest usually reveal a pulmonary tumor. The type of lesion can then be determined by histologic examination of the sputum, bronchoscopy, biopsy of the primary lesion or a metastatic node if present. There seems to be no connection between the histologic types of pulmonary tumor and hypertrophic pulmonary osteoarthritis.

The *treatment* of hypertrophic pulmonary osteoarthritis secondary to a pulmonary tumor is pulmonary resection, which is followed by prompt relief of the arthritic symptoms. Roentgen ray treatment of the primary disease in the lung has also been followed by improvement in the arthritis.

GOUT

Gout and gouty arthritis continue to be mistaken for traumatic, infectious, and rheumatoid arthritis. The *clinical picture* of gout may be characterized by chronic arthralgia of many months' duration. The initial joint affected may be one other than the classical site in 30 to 40 per cent of patients. Tophi are rarely present with the initial attack and may never appear. Fever of significant degree may accompany the acute attack and prove a distracting clinical feature. Muscular atrophy, especially about the large joints, may cause a chronic disability and give the impression that the arthritis itself is active or incapacitating. Today, few patients with gout give a history of dietary indiscretion, which was formerly associated with this disease. Whereas in gout bilateral symmetrical involvement of joints is not typical, not infrequently one joint may be involved, then subside partially only to have the symmetrical joint on the opposite side become equally swollen and painful. These variations in the clinical picture from the classical attack of podagra still add confusion to the correct early diagnosis of gout and lead to utilization of therapeutic measures for rheumatoid arthritis.

In patients demonstrating none of the foregoing features the *diagnosis* of gout may be established more readily if its possibility is considered in all arthritic patients. The absence of fatigue in the patient with articular swelling is more characteristic of gout than rheumatoid arthritis. In my experience the temporomandibular joints frequently become sore, stiff or uncomfortable in patients with rheumatoid arthritis but not in those with gout. Patients with gout often come to recognize a pattern of progression of involvement in which eight to forty-eight hours before the most painful phase of the attack there is a burning, tingling,

stiffness or a different type of pain at the same site, which serves as a *warning sign.* History of renal stone is also evidence in support of a diagnosis of gout.

Elevated uric acid level is, of course, most helpful and serum uric acid determination should be done in every patient with arthritis. Normal serum uric acid level in suggestive cases of arthritis does not mean that the patient does not have gout for frequently it will eventually become elevated. Often, the most expedient diagnostic aid is a course of colchicine, consisting of oral administration of 1/100 gr. tablets every two hours until nausea, vomiting, or diarrhea develops or pain is relieved.

Treatment of gout may be considered in two parts: management of the acute attack and long range control. The acute attack can best be handled by the early adequate administration of colchicine. The most effective dosage is the same as that used for diagnostic purposes. It should be given as soon as there is any suggestion of a gouty attack, and possibly continued in smaller daily doses (1/100 gr. once or twice daily) for ten to fourteen days following complete subsidence of all evidence of arthritis. This may prevent a recurrence during the convalescent period. The patient should be kept in bed, especially if weight bearing joints are involved. Ambulation is best avoided until all evidence of inflammation has subsided. Local application of heat or cold may alleviate the pain.

Aspirin in large daily doses can also relieve some patients with gout. ACTH along with colchicine may be effective in colchicine resistant cases. Phenylbutazone may alleviate the acute attack of gout and is welcomed by those patients who react unfavorably to colchicine. Unless close medical supervision is maintained, patients should not be given phenylbutazone for more than five to seven days.

Between attacks the patient's diet should be supervised so as to correct or prevent obesity, to eliminate excessive high purine foods, to maintain a high fluid intake and if necessary to alkalize the urine to avoid excessive uric acid, which would hasten recurrent acute attacks. Large daily doses of aspirin serve as a uricosuric agent and often alleviate some of the chronic gouty arthritic discomfort. Benemid is an effective uricosuric drug. In many instances it appears to reduce the number of acute recurrences and diminishes the chronic disability. It is of no value for treating the acute attack.

The injection of Compound F (hydrocortisone) may be useful during an acute attack or in a patient with chronic symptomatic gouty arthritis.

OSTEOARTHRITIS, OBESITY, AND TRAUMA

The most common articular disease, osteoarthritis, is seldom mistaken for rheumatoid arthritis. However, the obese patient with osteoarthritis of the knee occasionally presents a clinical picture suggestive of rheumatoid arthritis. Mild trauma, such as excessive walking, standing or carrying a heavy object, causes these patients' knees to become swollen, tender, red, warm, and painful on motion. The patient is usually afraid to stop walking lest his knees "freeze up." Consequently, the joints continue to be irritated and chronic disability results. The condition affects older people in whom fatigue is not uncommon. This may cause the physician to consider rheumatoid involvement. The picture may appear still more like rheumatoid inflammation because of atrophy of the adjacent musculature and the occurrence of slight flexion deformities. The most common site to which this applies is the knee joint. The anterior thigh musculature in such patients often is so greatly atrophied that the knee joint lacks stability, adding further to incapacitation.

These patients are practically always women who have already undergone the menopause and who have a long history of obesity with recent gain in weight. The knees are often so fat that it is difficult definitely to identify any inflammatory swelling. Questioning reveals one or more days of unusual activity, such as

shopping all day during sales or holding a grandchild for long periods while standing. The patient usually obtains some relief with rest and feels worse with activity. The body stiffness or jelling characteristic of rheumatoid arthritis is lacking. Although they often complain of fatigue, this is not utter exhaustion and it alone does not limit their activities. Absence of acute synovitis in other joints also helps exclude rheumatoid inflammation.

Treatment: These patients frequently respond promptly to absolute rest in bed for one or two weeks during which time local application of heat adds to their comfort. With improvement the extremities involved should be lightly massaged and exercised to restore and preserve muscular strength.

Injections of Compound F into the joint help to shorten the period of rehabilitation, for by alleviating the pain and swelling, it permits early ambulation and physical therapy to restore muscular strength and full range of motion in the joint. If Compound F is not used, aspirin or other salicylates usually suffice to counteract pain. The need for narcotics suggests more significant disease.

A light support for the knee, or brace, may be helpful in governing stability of the involved joint but seldom need this be elaborate. Weight reduction is, of course, the cardinal aim, and unless it is accomplished, the condition will either not be completely alleviated or will recur.

OTHER CONDITIONS

The classical picture of paralysis agitans offers no diagnostic problem. However, several features of the disease sometimes cause confusion in diagnosis and treatment. The patient with early Parkinsonism has only suggestive complaints of articular soreness and stiffening, which he and his family attribute to disease in the joint. When these complaints are coupled with limited use, and occasionally, mild swelling of the hand, the clinical picture may become more confusing. Hemi-Parkinsonism makes the picture even more bizarre and may lead to therapeutic measures directed primarily to the joints.

The patient with well established paralysis agitans may also be troubled primarily with discomfort in the joint and pain in the spastic upper extremities. Although it may be tempting to treat the arthralgia as a separate entity, this is best handled by primarily treating the Parkinsonism.

Differentiation of these cases from rheumatoid arthritis is not difficult if such possibilities are kept in mind and the neurologic status is fully evaluated. Effective therapy for the paralysis agitans usually alleviates the articular discomfort as well.

The widespread use of antibiotics, especially penicillin, has made subsequent sensitivity reactions relatively commonplace. These reactions are often marked by generalized arthralgia and occasionally there is definite bilateral symmetrical articular swelling, which, when combined with the associated malaise can mimic the early picture of rheumatoid arthritis. Serum sickness can result in similar symptoms. The history of previous administration of antibiotics, the presence of a rash, and the absence of muscular atrophy are often the only major differentiating points. Time, ACTH, and cortisone have been helpful therapeutic aids to control symptoms until the allergic reaction subsides. It is sometimes necessary to continue this therapy for weeks.

Slocumb [13] called attention to the development of a condition in patients with rheumatoid arthritis who receive excessive doses of cortisone, which he called "hypercortisonism." The symptoms, which are suggestive of a rheumatoid exacerbation, include exaggeration of the stiffness, aching, pain or soreness. This is seldom associated with increased synovitis or tenderness, as would be expected in a recurrent attack of rheumatoid arthritis.

SUMMARY

The painful swollen joints of early rheumatoid arthritis can sometimes be mimicked by the arthritis of other conditions, such as shoulder-hand syndrome, hyper-

trophic pulmonary osteoarthropathy, gout, osteotraumatic arthritis of the knee, serum sickness, and paralysis agitans. Differentiation is essential for proper management.

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THE PHYSICIAN'S ROLE IN A COMMUNITY HEALTH PROGRAM *

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Every physician, by the very fact that he assumes the care and treatment of a human being, must likewise assume a role of responsibility for the patient's mental and emotional well-being. This fact applies equally whether the physician be engaged in general practice or one of the more specialized fields. The surgeon cannot adequately treat and care for his patient if he loses sight of the fact that the examination procedure, presence of disturbed function or diseased tissue, and the possibility of some surgical procedure all have a psychological impact on the individual. The obstetrician cannot adequately offer prenatal care to the mother and plan for the ultimate delivery without giving proper consideration to the psychological aspects of this female function, which may be considered a normal physiological function of the female by every one except the patient. The gynecologist would be guilty of wanton neglect if he failed to consider his patient's psychological involvement in what happens to her genital organs. The E.N.T. man who so glibly says that the child's tonsils must come out should also recognize that this child will be exposed to one of the generally recognized most traumatic psychological experiences of his or her life and should approach the procedure accordingly. Thus, might we go on and enumerate each specialized field and point out the responsibility of the physician which would only, in final analysis, be a restatement of the fact that the psyche and soma are inseparable and there is an interdependence as to their health and well being.

Consequently, we must recognize that the primary role of every physician in any mental health program which involves the patient, and therefore the medical community, is that of a first line of defense. He must at all times be alert and aware as to the effect his approach to and handling of the physical problems may have upon a patient. He must be sensitive to the psychological aspects of the various physical and organic disorders, and at the same time cognizant of the psychological disorders which may be responsible for and producing somatic symptoms or functional disorders. By sensitive awareness and understanding, he will be doing much to promote the mental health of his community and, at the same time, utilizing his expert skill to restore and improve their physical health.

The patient is a human being with worries, fears, hopes, and despairs, and not merely a bearer of organs. As such, he has become an object of medical interest and in the last two decades has for

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this reason demanded increasing attention as to the causative role of emotional factors in disease. With a growing psychological orientation among physicians, there is an increasing attempt through modern scientific medical psychology to place medical art, the psychological effect of the physician upon the patient, on a scientific basis and make it an integral part of therapy. This undefined emotional rapport between physician and patient is with little doubt the factor in much of the therapeutic success of the healing profession. Today there is a growing acceptance of the concept that local anatomical changes themselves may result from more general disturbances which develop in consequence of faulty function, excessive stress, or environmental factors.

Modern clinical medicine has become divided into two portions—one, considered the more advanced and scientific, includes all disturbances that can be explained in terms of physiology and general pathology; (for example, organic heart defects, diabetes, infectious diseases, etc.) and the other, considered less scientific, which includes a great conglomeration of ailments of obscure, frequently psychic, origin. This has resulted in a tendency to force more and more diseases into the etiological scheme of infection, where pathogenic cause and pathological effect appear to have a comparatively simple relationship to each other. When the infectious or organic explanation fails, the modern clinician is only too ready to console himself with the hope that some time in the future, after more details of organic processes are known, the psychic factor, unwillingly admitted, will eventually be eliminated. However, gradually more and more clinicians with a broader perspective have come to recognize that even in physiologically well understood disturbances, such as diabetes and essential hypertension, only the last links in the causal chain are known and the primary etiological factors still remain in darkness. There exists a peculiar discrepancy between the official theoretical and the factual practical attitude of the physician in his practice. In his scientific contributions, in his addresses to medical groups, he will stress the need for knowing more and more details about the underlying physiological and pathological processes, and he will refuse to believe seriously in psychogenic ideology. In his private practice, however, he will, without hesitation, advise his patient suffering from essential hypertension to try to relax, take life less seriously, avoid over-work, and he will try to convince his patient that his over-active, over-ambitious attitude in life is the real source of his high blood pressure. It is felt that the practitioner assumes a somewhat dogmatic antipsychological scientific attitude only because he does not know exactly how this psychic element works and because it is so contradictory to everything he has learned during his medical training and because the recognition of the psychic factor seemingly disrupts the consistency of the physiochemical theory of life, and therefore he tries to disregard the psychic factor as much as possible. However, when confronted with his patients, he is forced to pay primary attention to this factor and although he may identify it as medical art, it is actually the deeper intuitive knowledge which he has obtained during the long years of his clinical experience.

Might it be suggested then that the physician assume a more conscious psychosomatic orientation in medicine and thereby serve an important role in the mental health of his patient and community.

It would be most difficult for a physician either to recognize the need of his patient or to be able to recommend appropriate measures for relief of symptoms and ultimate rehabilitation, if he himself was not fully aware of the implications of symptoms and possibilities for the various types of therapy. It may thus be assumed, as a responsibility of every physician to develop an awareness of the symptoms of emotional illness, both in the more subtle lesser degree and more evident and disturbing aspects. Every opportunity should be taken to acquaint one-

self with the fundamentals of psychopathology and psychodynamics. There should be an open-minded recognition of the possibilities of the various types of therapy and an avoidance of any inclination to unduly favor, recommend, or insist upon a type of therapy because it may be more easily accepted as something being done for the patient. Acquisition of such knowledge and information by the physician would enable him to enlighten his patients and thereby relieve some of their distress, and in doing so he would be taking the role of an educator in mental health.

The patient-physician relationship has always been one that was characterized by a mixture of trust, affection, and even adoration. Even though this relationship which was exemplified most by the family physician, now almost extinct in some areas, has been endangered by the highly specialized, mechanized, antibiotic approach of our profession at this time, it still exists and as such should be recognized and utilized to the advantage of the patient and not to the narcissistic edification of the physician. This relationship places the physician in a strong position to advise and influence the patient in his thinking and attitude toward himself and the physical or mental aspects of his being. Consequently, the physician can and should utilize this opportunity to enlighten the patient and dispel some of his old fears and prejudices in matters of acceptance of emotional disturbances in themselves and others. They should be helped to recognize that to be told that their symptoms are functional or emotional in origin does not imply they are victims of their own imagination or that they are in any way bordering on a delusional hypochondriacal state. Furthermore, they should be helped to understand that when any type of psychiatric help is recommended this does not label them as insane and there is no need to immediately mobilize all their resources in an effort to deny and hide from others any suggestion of their disorder. It should be pointed out to the patient that it is a fallacy to attempt to reassure himself by avoiding psychiatric help or even his frequent attempt in making extensive effort to keep such help a closely guarded secret. This supportive and reassuring role of the physician can play an important role in the mental health of the ill persons he may come in contact with.

A commission, headed by Dr. Dan Blain, recently made an exhaustive survey of the facilities and needs of the State of Louisiana for psychiatric care and promotion of mental health. The essence of these reports was that the principal efforts be directed toward early care and preventive measures at a local community or regional level. We, as physicians, should be heartily in accord with and endorse such a program as it has most to offer in terms of practicality and facility and would do much to insure every opportunity for the emotionally ill person to receive early and appropriate care. One of the provisions of the Hill-Burton Bill was that facilities be provided in general hospitals for the treatment of psychiatric patients. The physician should express his approval of this adea at his own hospital and cooperate wherever possible in promoting the establishment and use of such facilities for these people of his community. By encouraging and helping to establish such facilities, the physician is assuming an important and effective role in his community's mental health program.

In summary, it should behoove all of us as physicians to exert every effort to bring about a state of general well being, including mental health, in our patients and all members of the community. To reiterate how we may best serve in this role, I should like to suggest (1) an individual awareness of the psychological effect of our approach to and treatment of the patient. (2) An honest recognition of our own feelings toward the ideas and concepts of psychological and emotional factors and the part they play in the etiology and cause of any illness. This would mean an unprejudiced and honest effort to entertain the newer principles of the

psychosomatic orientation of medicine and avoid a zealous reluctance to question the exclusive physiochemical orientation. (3) A personal effort to become more enlightened upon what psychiatry has to offer a great number of your patients and to allay some of their and our old prejudices. (4) To serve as a source of information to our patients so that they may more clearly understand and be able to accept an emotional illness or disordered thinking and behavior, together with psychiatric care, as something other than a stigma. (5) That each individual physician assume an active interest and role in promoting and supporting all functions and facilities in his community which have as their purpose the aid and treatment of the emotionally ill person.

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THE PROBLEM OF DYSPAREUNIA AND FRIGIDITY *

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With the recent widespread interest in human sex relationships it is apropos at this time to discuss certain problems arising in connection with sex adjustment in women.

Moving pictures, advertisements, novels and the overwhelming public preoccupation with sex tend to make one believe that the average American woman is not only well adjusted but perhaps more strongly sexed than usual.

To the gynecologist this is very far from true. Actually, frigidity, dsypareunia or neuroses associated with sex maladjustment constitute the most frequent psychosomatic problems encountered.

It has been estimated that 25 per cent or more of women are frigid, or have relatively weak sex response as determined by orgasm. Frigidity must be adequately defined, since the term as used covers many meanings, such as dsypareunia, lack of libido, vaginal anesthesia, etc. Many people feel that frigidity is due to some sort of physical inadequacy in the genitalia, or due to failure in sex technique. However, it has been fairly well established that in most women the genitalia are quite adequate for sex relations and indeed that vulvectomy and hysterectomy may not hinder active sex response; and finally, that women may achieve orgasm without actually having intercourse.

Frigidity then is a psychosomatic disorder or a neurosis with strong psychic inhibition either conscious or subconscious and is exhibited by failure to achieve orgasm. Orgasm in the female is a complex psychogenic experience, the physiology of which has not yet been completely determined. Whether the seat of orgasm is clitoridal or vaginal has been held to have some diagnostic value. Knight [1] believes that clitoridal orgasm represents an immature response in which transference of attention to the vagina has not taken place because of fixation in childhood on the clitoris as the substitute for the penis; hence the mature response or vaginal orgasm is inhibited.

I believe that we must disagree somewhat with this theory because numerous case histories reveal that the clitoris plays a tremendous part in initiating sex impulses and because of its position and its homologous relation to the penis anatomically and embryologically it may well be designed to play a major role in the mechanism of orgasm.

The many ways in which orgasm is inhibited psychically have been studied extensively and there is a tremendous wealth of material on the subject. One may well become lost in the maze of psychiatric interpretations of the origins of this neurosis including such theories as penis envy, castration complex, narcissism, masochism, maternal hatred, father hatred, homosexuality, nymphomania and many more. It is not my purpose, nor do we

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have the time today to elaborate on these psychosexual theories. We cannot dismiss them lightly because in many special cases their significance becomes obvious. It is my belief, however, that many cases of frigidity can be traced back to causes which we can treat as general practitioners and as gynecologists and which are not so deep seated as to require special psychiatric care.

We can broadly classify frigidity as being due to

1. Causes due to deep rooted psychosexual conflicts.

2. Those due to readily recognizable situational or environmental factors.

It is the latter that I shall emphasize today.

One cannot stress too strongly the necessity of giving the patient time to tell her story and of becoming acquainted with the physician and his sympathetic attention, so that reticence is abolished and the often embarrassing details, which so frequently constitute the real background of her visit, are disclosed.

Once rapport is established it becomes relatively easy to ask such questions as are pertinent and one can piece together a background indicating that the chief complaint, often physical in character, such as backache, weight in the pelvis, pelvic pain, menstrual dysfunction, actually has its origin in psychosexual disorders notably frigidity or incomplete sex response. As we take the history in a case of frigidity, it is convenient to question the patient in an orderly manner which can be outlined as follows:

1. Certain conflicts arise in childhood and early adolescence and are significant of lack of emotional development. These will include homosexuality, infantile fixations, narcissism, asceticism, father hatred, Oedipus complex, etc. and if our questions reveal such a background the patient should be referred to a psychiatrist.

2. Other conflicts in childhood and early adolescence are:

a. Lack of education in sex psysiology and sex technique.

b. Deep rooted moral and religious prejudices.

c. Fears, disgust or revulsion instilled by parents, educators or companions or religious instructors.

d. Social prejudices and fears referable to menstruation, lactation and child bearing.

3. In the young adult we find inhibition resulting from:

a. The shock of the first sex experience.

b. Fear of defloration.

c. Unusual sex experiences as rape, perversion and rather frequent cause in young girls, viz., that of male exhibitionism.

d. Fear of venereal disease.

e. Sense of shame, embarrassment or guilt.

4. When we begin questions about the marriage itself we find numerous factors quite tangible and discernible.

a. One of the most tragic is the choice of the wrong mate and often the simple question, "Do you love your husband?" will bring a flood of tears and a painful story of disillusionment and disappointment. The term facultative frigidity is applied in those cases in which the woman is frigid for one mate but not necessarily frigid for another and I suppose the many marriages of Hollywood actors and actresses and others represent a constant search for the right mate—the woman not realizing however that the basic narcissism makes this impossible.

b. The conduct of the wedding night has been given as a frequent cause of frigidity in sensitive women. However this is not noted as a common cause so often today. It has in turn given way to:

c. Pregnophobia, which I can safely say is one of the major causes of inhibition in the sex relationships. One of my patients admitted to sex abstinence for seventeen years following the painful birth of several

children (which I did not deliver, incidentally.)

d. Waning interest of the husband and infidelity are frequent factors which cause anger, and repression of her own sex impulses in the woman.

It must be remembered that harmonious relations in marriage depend on the husband as well as the wife and if our patient does not have orgasm we must inquire into

e. Impotence or premature ejaculation.

f. Onanism.

g. Inepitude in sex technique.

In this latter instance the matter of technique is not as important as the realization that there is frequently a time deficit when there should be concurrence of orgasm. The average male may achieve orgasm in three to five minutes, while it is frequently noted that women being more passive and taking a longer time to respond may require fifteen minutes or longer to achieve climax. This deficit is responsible not only for much unhappiness but the chronic tumescence resulting therefrom frequently causes pelvic congestion, ovarian pain, chronic discharge, backache, and occasionally menstrual disturbances.

h. In modern marriages, as might be expected, other factors play a role and differences in social and intellectual interests may well be the starting point for loss, particularly in the woman of her "sex ideal."

5. Outside of the actual marriage certain environmental factors can play an important role among which can be mentioned:

a. Living with relatives and inlaws. This is an exceedingly common cause for loss of sex intimacy and inhibition and many cases could be cited not only of frigidity but of actual broken marriages when the mother or mother-in-law not only meddles in the every day affairs of the young couple but comments on their nocturnal activities as well.

b. Too close relationship with children, as when living space is too crowded.

c. Insufficient income with the wife sharing in the support of the family.

d. Illness of a constitutional type.

e. Overwork, fatigue, and anxiety of financial, social and child rearing problems.

This has been a rather long list of causes for frigidity but I believe that they illustrate a practical approach as far as situational or environmental factors are concerned. It is only fair to state, however, that to the psychiatrist these represent superficial causes. He will hold for example, that if a woman is apparently frigid because rape was attempted on her:

1. Many women may have had attempted rape without becoming frigid.

2. This particular woman may have some deep rooted conflict for example a guilt complex in which the attempted rape represented a masochistic satisfaction.

I have no quarrel with the study of the deeper layers of the neuroses, however, I do feel that in our scientific analyses we can somehow lose sight of the problem at hand.

To return to our victim of attempted rape in young adulthood. If we can convince her that her husband is a fine man and that the incident in her life was unusual, accidental and the result of extenuating circumstances, and reorient her attitude to the role of wife and mother by patient instruction, I think we can go far toward helping her to adjust. I dwell on this instance because one such patient not only adjusted but actually became the dominant partner later on.

The most satisfactory results in treating this condition as in so many other medical conditions come from prophylaxis.

If a young woman comes for premarital advice and examination, or better, a young couple, to frankly talk over the questions so frequently unanswered, or partly answered by friends, parents, educators,—one will almost invariably find a quicker and happier marital adjustment and a more intelligent and less embarrassed approach to sex problems.

The patient who comes in with the story of frigidity for fifteen years can

seldom be helped, nor can we advise the unfortunate victim of facultative frigidity to get another mate, without dire consequences.

Any discussion of frigidity entails recognition of a closely related condition which is in part of psychosomatic origin. This is dyspareunia and refers to painful or difficult intercourse.

Dyspareunia can be anatomical as a result of a rigid or imperforate hymen or a too tightly closed episiotomy or vaginal absence. It can also be caused by septate vagina, synechiae of the vagina, neoplasms, vaginal atrophy, condyloma, granuloma, and numerous other physical and pathological factors. When it is associated with frigidity, dyspareunia is caused by vaginismus which is a powerful spasm of the levator and bulbocavernosus muscles brought about by strong subconscious inhibition and makes intercourse all but impossible.

Local treatment consists in the use of graduated dilators, which the patient inserts herself, at home during the day and before intercourse. Re-education and reorientation are of course employed at office visits.

If necessary, the outlet may be widened by a small plastic operation on the perineum.

Occasionally, we find lack of sex stimulation in the patient with a widely relaxed perineum and some patients actually request repair when this condition obtains. Kegel's exercises have been advocated in the postpartal period to prevent this type of frigidity, and are well worth trying.

No discussion of frigidity or dsypareunia would be complete without mention of drug or endocrine therapy.

In general drug therapy for frigidity has relatively few advocates today although the sale of aphrodisiacs over drug counters still goes on apace, especially in the Negro population. The use of hormones especially testosterone stems from the reports that women with breast cancer treated with androgens have occasionally shown some increase in libido.

Assuming that frigidity is a neurosis it is difficult to see how drug therapy can be of any avail.

Having established the diagnosis there are many things we can do to help the patient to a satisfactory adjustment. First we can eliminate physical causes inasmuch as they play a part by:

1. Treatment of inflammation.
2. Repair of relaxed perineum.
3. Kegel's exercises.
4. Hymenotomy, when indicated.
5. Vaginal dilators for vaginismus.
6. Plastic construction of a vagina, when absent.
7. Removal of tumors or surgery of local pathology.

More important however and in the majority of cases of frigidity we can employ one of the following:

1. Authority and confidence regarding sex matters.
2. Kindly interest and sympathetic help in gaining insight into the sex problem.
3. Dispel ignorance, fears and taboos.
4. Frank discussion, and sex education in physiology, and technique using dignified but simple language and anatomic plates where necessary; as many lay people have but sketchy knowledge of genital anatomy.
5. Contraceptive advice when indicated.
6. The use of authoritive books or sex manuals.
7. Premarital examination and counseling.
8. Referral for psychoanalysis.

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HEARING SURVEY AMONG 3500 NEW ORLEANS SCHOOL CHILDREN

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There are no available figures as to the incidence of hearing loss in our school

population because Louisiana is one of thirteen states without a routine school hearing testing program. This should be a matter of deep concern inasmuch as various studies throughout the nation reveal that about 5 per cent of school age children have some hearing impairment and that in two to three per cent the loss is severe enough to be considered handicapping. Furthermore, authorities have frequently emphasized the desirability of discovering hearing losses and their commonly associated speech disorders, as early as possible in school life.

We conducted a pilot study in 500 first grade children in the parochial schools of New Orleans during the early months of 1953, so that we could compare the incidence of school age hearing loss in our community with that in other states. Our experience in the pilot study was such that 3500 additional children were tested during the 1953-1954 school year. The following is a report of the findings of this study, some of the problems encountered, and the conclusions which we have reached.

MATERIAL AND METHOD

At the outset, we must emphasize that we are aware of the variations which exist in the reported statistics on the frequency of hearing impairment in children. There are several explanations for this, among the most common being variations in testing techniques, lack of control of acoustic conditions in the testing environment, and the well-known tendency of children to exhibit fluctuations in hearing thresholds. Our aim was therefore to obtain the most accurate information possible within the framework of these limitations.

As was mentioned previously, it is most desirable to discover school age hearing loss as early as possible; therefore, it was decided to test first grade children during the pilot study. We must admit that we were dubious at first as to the cooperation we would receive from the six year old first graders. This doubt as to their ability to cope with the testing method was soon dispelled, and we were able to complete both the pilot and the extended study with this age group.

Funds were not available for paid personnel, so mothers whose interest had been stimulated by discussions in their mother's clubs were trained in the pure tone screening technique until we were certain that they were capable of performing the tests. During the time the screening tests were done in the various schools, an experienced technician was available to assist these mothers when special problems arose.

The screening tests were done with portable audiometers in the quietest room available in each school. Each child was sweepchecked in each ear for the frequencies 250, 500, 1000, 2000, 4000, and 8000 double vibrations. Any child who showed a loss of *more* than *20* decibels in one or more frequencies was considered to have failed the screening test and was given an appointment to appear at a later date with a parent for a complete threshold hearing evaluation. At this time, a complete ear, nose and throat history was obtained from the parent, the child was thoroughly examined, and the hearing threshold for all frequencies was determined in sound-treated rooms. An explanation of the cause of the hearing defect was given to the parent and a recommendation to consult a physician of the parent's own choosing was made. The parent was also informed that, during the next school year, the child's hearing would be rechecked to determine whether the defect had been corrected.

RESULTS

The results of the survey will be found in Table 1. Of the 3500 children tested, 245, or 7.0 per cent, failed the screening test. Only 150 children, or 61 per cent of

TABLE 1
RESULTS OF SURVEY

Total Children Tested (Screening Technique)	3500
Failed Screening Test	245
Appeared For Recheck	150
Normal On Recheck	95
Significant Hearing Loss	55
Conductive Hearing Loss	50
Perceptive Hearing Loss	5
Parents Aware Of Hearing Loss	11

those who failed the screening test, appeared for a recheck examination. Of the 150 children rechecked, 55 were found to have significant hearing loss; though the number is admittedly too small to be conclusive, this figure would indicate that about one third of the children picked up in routine screening surveys will prove to have significant hearing losses.

The hearing loss in 50 of the 55 children was due to interference with the sound conducting mechanism. It has been repeatedly shown that 75 to 90 per cent of the cases with conductive hearing loss are completely reversible, provided adequate treatment is administered before permanent changes in the middle ear or hearing nerve have occurred.

Five of the children, or about 10 per cent, had a nerve type of hearing loss which could not be corrected, but required such rehabilitative measures as the use of hearing aids, speech and auditory training, and special consideration in the classroom.

Of the 150 children rechecked, 95 proved to have normal hearing on careful re-examination. Such fluctuation in hearing acuity is most often present because of intermittent Eustachian tube blockage due to nasal allergy, upper respiratory infection, and other such conditions.

Of 55 parents with hard of hearing children, only 11, or 20 per cent, were aware of the condition prior to testing.

PROBLEMS ENCOUNTERED

Parental education was not as effective as it should have been and many of the difficulties encountered during the course of the survey were from different aspects of this problem.

Funds were not available and it was necessary to rely on volunteers completely. We were obliged to secure certain key personnel and indoctrinate them with an understanding of the importance of the work to be done. These individuals, in turn, went to the mother's clubs of the various schools, arranged for discussions of hearing loss in school children, and attempted to interest volunteers in attending classes to learn the sweepcheck technique. The key personnel and the volunteers then arranged the mechanics of the actual testing procedure and performed the sweepcheck screening tests. It was also their responsibility to notify parents whose children failed the test and arrange for them to return for a recheck.

For the most part, volunteer cooperation was good. However, mother's clubs in certain schools did not do as well as could be expected, so that only 3500 children instead of the anticipated 5600 children were tested. We feel that this was due to poor parental education; these women were not convinced of the necessity and importance of the program.

Poor parental education and understanding also explains the fact that only 150 of the 245 children who failed the screening test appeared for the recheck examination. We are of the opinion, that had the volunteer workers and the mothers of the children been properly prepared, the percentage of children seen for recheck examination would have been greater.

Finally, only 12 per cent of the parents with hard of hearing children were aware of the condition prior to testing. This indicates that parental education on the subject of hearing loss in children is sorely needed. It also emphasizes the need for a routine school hearing testing program; if these children had not been discovered, it is likely that the hearing loss would have remained undiscovered until it was irreversible.

Another problem encountered concerned those students who failed the screening test but who had normal hearing on recheck examination. These children should not be forgotten, but must be watched and rechecked at a later date, to be certain that we are not dealing with an early fluctuating loss.

We feel that all of these problems could be easily remedied if full-time paid personnel were available. They could not only carry out the testing, but could also handle the educational aspects of the program.

CONCLUSIONS

The results of this survey make the need for a routine hearing testing program in the schools of New Orleans and throughout the state of Louisiana evident. Ideally, every child in every school should be checked once yearly, but this is not possible because of the large number of children involved. Authorities agree that hearing loss should be discovered as early as possible, and therefore, at the inception of a hearing program all first grade children should be tested each year. We have shown that modern audiometric testing techniques can be used in this age group.

Success of such a program depends almost entirely on the amount of cooperation received from the parents of the children. Therefore, parental education is a most important element in the framework of such an undertaking. Parents should be made to realize the importance and desirability of such a survey, so that when the screening test reveals the possibility of hearing loss in a particular child, the parent will cooperate in the follow-up work.

We furthermore feel that such a program should be in the hands of a fixed staff of paid personnel under the direction of an otologist in order to obtain maximum benefits.

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SIMPLIFIED INSURANCE CLAIM FORMS

Insurance claim forms have become an increasing problem to the practitioner of medicine from the point of view of volume and from the point of view of complexity.

In the meeting of the House of Delegates of the Louisiana State Medical Society, in 1954, interest was manifest in securing simplified and uniform insurance claim forms, if necessary, through legal legislative channels. Shortly thereafter, it became manifest that the insurance companies and the American Medical Association were collaborating in an effort to bring about such a result. Several years ago, certain simplified insurance claim forms were developed by the Health and Accident Underwriters Conference and the International Claim Association. They were approved by the National Association of Insurance Commissioners and by the Council on Medical Service. These forms, at the time, did not come into general acceptance, for which there were advanced several reasons. When it became apparent that further efforts were necessary, resolutions were introduced in and adopted by the House of Delegates of the AMA, calling for renewed activity in this field, such as conferences between the Health Insurance Council and the AMA. The Health Insurance Council created a special committee on uniform claim forms, which committee was representative of all types of insurance companies writing surgical expense benefit coverage. This committee circularized some 600 insurance companies to get expressions of minimal needs for administering group surgical expense insurance benefits.

The special committee of the Health Insurance Council and the Committee on Prepayment and Hospital Service of the Council on Medical Service of the AMA have collaborated to produce a form designated as "GS-1" to cover the surgeon's statement for the patient with prepayment surgical insurance. This form is simpler than those in current use and has only five groups of questions. It is such as the surgeon could fill out easily, or trained assistants could complete with minimal help. Its acceptance and use by our constituent associations is most desirable.

The Committee on Prepayment Medical and Hospital Service of the Council on Medical Service contemplates some six additional simplified forms to cover the diversity of types of benefits offered by the various prepayment plans. As progress is realized, it is planned that it will be reported promptly to the profession.

The need for simplification of these forms has been recognized by the insurance companies themselves, as was shown

by the outgoing president of the International Claim Association, who felt that simplification was the most important item on the agenda. He summarized the complaints against the forms in use, in 1953, as follows:

1. Too many different forms
2. Forms too long and too complex
3. Same questions worded in different ways requiring study to determine just what information was wanted
4. Nonmedical and investigative inquiries made in medical forms
5. Forms used were often an imposition on the physician's time and not infrequently a reflection on his integrity.

From information gathered by the special committee it appeared that the complaints were well justified. It was found that insurance companies were using "26 different ways to inquire about diagnosis, 34 different ways to inquire about present condition (of patient), and 42 different ways to inquire about prognosis."

Simplification of these forms will work in the direction of better service for the patient. At present, there is a triangular conflict developing between the insurance company, the patient, and the physician. The physician finds the form exacting and time consuming. The patient feels that completion of the form is merely a written record of a service already performed, and presumably, paid for. The companies have taken the position that they are not obligated to pay for proof of a claim against themselves. When the information desired is primarily for the benefit of the company, it is clear that the responsibility for payment falls upon the company. When the information or certification desired is of primary interest to the patient, it is thought that the physician should re-examine any inclination to charge the patient. Such action on the part of the physician promotes better feeling and improves medicine's public relations. This is considered advisable in spite of the obvious facts in the situation that there is no such thing as something for nothing and that every service is rendered at a cost. Ultimately, the patient has to pay as a part of the total cost of medical care, just as he pays a proportionate part of his insurance coverage.

The action on the part of the AMA and the Committee on Prepayment Medical and Hospital Service of the Council on Medical Service is to be commended, and it is hoped that the simplified forms, when available, will receive general acceptance and physician cooperation.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.



WALTER MOSS, M. D.
President
1954 - 1955

Dr. Walter Moss who has just completed his term as President of our Society has been very energetic in fostering many activities for the good of the Society and its members. This has been a very hectic year and many problems have arisen for consideration and solution. Dr. Moss has faced these problems with the idea always uppermost in his mind, as to what would be best for the good of our Society and its members.

Dr. Moss has at all times shown great interest in our component societies and has attended many of their meetings. He has always striven to create more interest and enthusiasm in the membership of these societies. He has attended many of the hospital staff meetings where he was always given an enthusiastic welcome.

Dr. Moss received his early education in the public schools of Lake Charles, Louisiana, his home city. He attended Tulane Medical School and received his M.D. degree in 1927. After graduation he served his internship in the Charity Hospital at New Orleans and following his internship he served with distinction as House Surgeon for four years, gaining much valuable surgical experience, thereby preparing himself for an active surgical practice which he has since enjoyed in the City of Lake Charles.

Dr. Moss was licensed to practice medicine in 1927 and on completion of his training at Charity Hospital at New Orleans he became a member of the State Society in 1933. He is also a member of the Southern Medical and American Medical Associations, is a Fellow of the American College, and International College of Surgeons. He is a Diplomate of the American Board of Surgery.

Dr. Moss has served in past years on Committees of the State Society and has also served as First Vice-President. He is very active in his local Medical Society and served as President of the Calcasieu Parish Medical Society during 1936-1937. He was Chairman of the State Board of Institutions in 1941-1942. Dr. Moss has been actively interested in the Tulane Alumni Association and served as its President in 1946-1947.

Dr. Moss takes quite an interest in civic affairs in his section of the State and is serving as a member of the Board of Directors of the Association of Commerce in Lake Charles at the present time.

Dr. Moss was quite active in the State Society's fight against the licensing and creation of an examining board for the chiropractors at the last session of the

State Legislature and is still very active in the promotion of plans for opposing such legislation in the 1956 Session.

Dr. Moss has recommended in his Annual Report that the House of Delegates increase the dues to $50.00 per year, thereby, giving the Society some much needed additional funds to assist us in our fight against any law which would legalize these cultists to practice medicine in Louisiana. This fight must go on unless the profession is ready to fraternize with these chiropractors and we do not believe this is your feeling at this time. Why not help Dr. Moss and many others in this desire to keep the practice of medicine on a high plane in Louisiana?

We wish to assure you, Dr. Moss, that the members of the Society appreciate your services, so willingly given, to its members and to organized medicine during the past year. We sincerely hope you will never lose interest in us but will continue to work for the good of the profession during your future medical career.

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TO THE MEMBERS OF THE LOUISIANA STATE MEDICAL SOCIETY

Your House of Delegates will meet at the Roosevelt Hotel at 9:00 in the morning of May 2, 1955. As you know, this is the policy-forming group of the State Society and it gives me great pleasure to invite you to attend all sessions of the House of Delegates. There will be many things of interest to you as a physician brought before this Body and there will be several distinguished guest speakers who will address the House.

ANNUAL MEETING
May 2 - 4

Don't forget to mark your calendar for above dates. A splendid scientific program has been prepared for you.

Frequently we do not show the essayists proper consideration and courtesy when we do not attend these scientific sessions. They go to a lot of trouble and spend many hours of their valuable time to prepare these papers for this meeting. We could, at least, devote a small part of our time in attendance at these meetings. After all, our members profit by gaining knowledge from hearing these papers and discussions. He, who best prepares himself renders better medical service to his patients.

The public opening meeting will be held on Monday evening, May 2, at 8:00 p. m., when Dr. F. J. L. Blasingame, Trustee of the American Medical Association and President of the Texas Medical Association will be the Annual Orator.

A luncheon meeting for all members of the Society will be held on Tuesday, May 3 at Noon. An interesting program is being planned in which some of the out-of-state guest speakers, as well as local speakers, will participate.

A most interesting and instructive meeting will be held Tuesday evening at 8:00 p. m. when Mr. Leo Brown, Director of the A.M.A. Public Relations Council will be featured as the guest speaker. This meeting will be for the members and their wives and members of the Woman's Auxiliary.

The Annual Dinner Dance will be on Wednesday evening, May 4, in conformity with the wishes of the Executive Committee. It will be held in the large new International Room at the Roosevelt Hotel where plenty of room for dancing will be available without disturbing anyone seated at their respective tables.

Come one—come all and have a good time.

TENTH ANNUAL NATIONAL CONFERENCE ON RURAL HEALTH
held by
THE AMERICAN MEDICAL ASSOCIATION
MILWAUKEE, WISCONSIN

The Tenth Rural Health Conference of the American Medical Association was held in the Schroeder Hotel, Milwaukee, Wisconsin, on January 24th to the 26th, 1955. The theme this year was "Looking Both Ways", and Louisiana was represented by three members of the Rural and Urban Health Committee of the State Society. Dr. M. C. Wiginton and Dr. Guy R. Jones were accompanied by their wives.

The Louisiana Health Council was represented by Mr. Robinson of Hammond, Mrs. T. R. Tomlinson of Shreveport, as well as three doctors of the Rural and Urban Health Committee. The attendance this year was a little less than usual, but still was around 500 people. They represented all sections of the country, all strata of society and most of the businesses and professions.

Dr. F. S. Crockett, Chairman, of Lafayette, Indiana was the guiding spirit as usual with these conferences. But other outstanding personalities from the medical profession as well as from fields of education, nursing, dentistry and agriculture were well in evidence. Panels were set up for each half day of the conference, and the first was held on Thursday afternoon. This panel was composed of a physician, an extension worker, a farmer, and a 4H boy and girl. On Friday morning, another panel on the "Family Responsibility for Health" was ably discussed by a physician, a homemaker, a farmer, and a 4H boy and girl. This was followed in the afternoon by a Public Health Program, and on Saturday morning "Gems of Wisdom" was expounded by several dif-

ferent speakers about almost every portion of rural life. The evening session on Thursday was given over to the recreational department of Milwaukee. The Friday night session was limelighted by the Medichoir put on by the medical students of the University of Wisconsin. The same night, Mrs. Charles W. Sewell spoke on the theme "How Far That Little Candle Throws Its Beam".

Again, the American Medical Association through its Rural Health Council has demonstrated what this conference can do. Everyone left feeling much enriched from this great experience. Next year, the meeting will be held in Portland, Oregon.

J. P. Sanders, M. D.,
Chairman, Rural and Urban
Health Committee,
Louisiana State Medical Society

A.M.A. PRESIDENT SUGGESTS CHANGE IN DEPENDENT MEDICAL CARE

The president of the American Medical Association today said that government help in providing medical care for servicemen's dependents should take into consideration the conservation of our "total medical resources."

Dr. Walter B. Martin, Norfolk, Va., said in the current (March 26) Journal of the A.M.A. that it is obvious the short-term serviceman may have difficulty in providing medical care for his family. Career personnel naturally look to the government for assistance, but the present system for short-term servicemen's dependents is "haphazard and unfair."

In attempting to improve the situation, the government should try to utilize both military and civilian medical sources, he said.

"To rob the one and overexpand the other is a harmful policy," Dr. Martin said. "If major hostilities should develop, a greatly expanded medical service for the armed forces will be required. They can effectively augment their strength only from a virile and effective civilian medical population.

"The present system of providing care for dependents is haphazard and unfair, since the availability of such care is now on the basis of chance proximity to a service institution. In other areas, remote from such hospitals, the bulk of the work must be done by civilian medical personnel and in civilian hospitals. Where both types of facilities exist, freedom of choice by the dependent as to where medical care is sought would depend on local conditions and other factors.

"The government hospitals in the continental United States are at present in competition with civilian hospitals in many areas. The federal government, in conjunction with states and localities, is spending millions of dollars under the Hospital Survey and Construction Act in civilian hospital construction, and yet, at the same time, this government is making it more difficult for some of these civilian hospitals to operate at a more reasonable cost.

"Much of the patient load that would normally flow into these hospitals is diverted from community enterprises into government-supported hospitals. This does not make sense from the standpoint of producing good medical care for the American people as a whole.

"It has resulted in the wasteful duplication of hospital facilities, unwarranted dispersion of needed personnel, and an increased cost of hospital care for those who pay their way.

"A voluntary system of insurance, jointly financed by the individual and the government, has been proposed. This plan should contain a clear definition of dependency and should allow freedom of choice by the dependents as to whether they seek care in an armed forces or a civilian facility.

"This plan would result in a more even distribution of civilian patients as between service and civilian hospitals, stabilize the intake, decrease the cost for the armed forces, and support the economy of the civilian hospital system. It would lessen the dislocation of both patients and professional and technical personnel and would conserve our total medical resources."

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

INTERIM MEETING LOUISIANA ACADEMY OF GENERAL PRACTICE

The Louisiana Academy of General Practice with the co-operation of Lederle Laboratories will present a Symposium on "Recent Advances in Medicine" on Sunday, April 17, 1955, at the Roosevelt Hotel in New Orleans. Invitations are being extended to all physicians in Louisiana, Mississippi, and South Texas.

The morning session will be devoted to discussions on "Proctology" by Dr. Howard T. Trimpi, Assistant Professor of Proctology at Temple University, and "Cardiac Auscultations" by Dr. William Likoff, Associate Professor of Medicine at Hahnemann Medical College.

The afternoon session will include a discussion on "The Future of Atomic Medicine" by Dr. Joseph W. Howland, Professor of Radiation Medicine at University of Rochester School of Medicine.

Following this discussion Dr. Edward Allen, Clinical Professor of Obstetrics and Gynecology at Rush Medical College will report on "The Diagnosis and Treatment of Gynecologic Disease in the Adolescent Girl."

Panel discussions and question periods will follow both morning and afternoon sessions. A midday luncheon will be provided in the International Room of the Roosevelt Hotel, and a cocktail party will follow the afternoon session. The doctor's wives are invited to both of these social events and a day full of activity is planned for the ladies. There is no registration for either the scientific or social events. All physicians and their wives are invited as guests of the Louisiana Academy of General Practice and Lederle Laboratories.

Advance reservations are requested and these should be addressed to: Rafael C. Sanchez, M. D., Louisiana Academy of General Practice, 217 Humble Bldg., 909 S. Jefferson Davis Parkway, New Orleans 25, Louisiana.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled Examination (Part II) oral and clinical for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from May 11 through May 20, 1955. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

REVIEWS OF A.M.A. MEDICAL MOTION PICTURES

The Committee on Medical Motion Pictures of the A.M.A. announces that Booklet #6 of Reviews of Medical Motion Pictures is now ready for distribution. This booklet contains 64 critical reviews of medical and health films which were published in THE JOURNAL during 1954. A copy has been sent to the secretary of each state medical society and they are available to county medical societies from the Committee on Medical Motion Pictures. Other requests should be sent to the Order Department, American Medical Association, 535 North Dearborn Street, Chicago 10. The price of individual booklets is 25 cents each or the complete set of six booklets including all reviews published since 1946 is available for $1.00.

COURSE IN THE CLINICAL PATHOLOGY AND PATHOLOGY OF PARASITIC DISEASES

A short intensive course on the laboratory diagnosis and pathology of parasitic infections will be presented August 15-27, 1955, at the Louisiana State University School of Medicine in New Orleans.

The course is designed primarily for pathologists and technologists. However, general prac-

titioners, internists, pediatricians, gastroenterologists and physicians engaged in the practice of public health and tropical medicine who are interested in the laboratory diagnosis of parasitic infections are welcome to attend. The instruction and training will be of assistance to pathologists who are preparing for board examinations, to pathologists and physicians who are responsible for the diagnosis of parasitic infections in their laboratories and to technologists engaged in this specialty.

The course will include lectures, extensive demonstrations, films and supervised individual laboratory study. Emphasis will be placed upon the practical aspects of laboratory diagnosis of common parasitic infections, including training in stool examination and stool concentration technics. Abundant material from patients with parasitic diseases endemic in this area will be available for examination. Comprehensive slide sets containing parasitic organisms in tissue sections will be studied. Library facilities are available. The medical school building is air conditioned.

Registrants should bring their microscopes, equipped with mechanical stages, and their microscope lamps. A limited number of places will be available. The fee for the course is $50.00.

Persons interested in attending this course may write to:

Dr. Clyde Swartzwelder
Department of Microbiology
Louisiana State University School of Medicine
1542 Tulane Avenue
New Orleans 12, Louisiana

AIR POLUTION PROBLEM

Plans have been completed by the Air Pollution Foundation in Los Angeles for stiff road tests to be given the Houdry catalytic converter, one of the most promising devices aimed at controlling emission of hydrocarbons from auto exhausts in the battle against smog.

The Air Pollution Foundation announced that it has contracted with the Southwest Research Institute at San Antonio, Texas, to check the operation of two types of mufflers designed by Eugene J. Houdry, one for use with nonleaded white gasoline and the other for use with gasoline containing tetraethyl lead.

W. L. Faith, chief engineer and deputy director of the Air Pollution Foundation, who made arrangements with Houdry in Wayne, Pennsylvania to test his device, says it is one of the "more promising catalytic devices for the auto exhaust."

LAKESIDE INTRODUCES PIPTAL FOR PEPTIC ULCER THERAPY

Piptal, a new oral cholinolytic for rapid and sustained relief of peptic ulcer and pain spasm, has been introduced nationally by Lakeside Laboratories, Inc.

The product is the second in the company's pioneering series of piperidols, developed in its extensive research program under the direction of Dr. Harvey L. Daiell. The first was Dactil, introduced in 1954.

Dr. Daiell said that clinical experience with Piptal has affirmed outstanding freedom from side effects such as urinary retention and constipation. These side effects have heretofore been unavoidable in peptic ulcer therapy with anticholinergics, he pointed out.

Piptal's action is sharply focused on the gastroduodenal area, Dr. Daiell reported. Consequently, its effect on the bowel and bladder is negligible.

SNAKE-ROOT DRUG BRINGS GAINS IN FIGHT AGAINST SCHIZOPHRENIA

A drug derived from an Indian root is proving a valuable weapon against this country's foremost mental disease problem, doctors from California and Illinois reported here today.

The drug, reserpine, has made it possible to reduce the need for drastic brain surgery, known as leucotomy, in cases where no other alternative had seemed possible, it was revealed.

These and other findings were presented at a meeting sponsored by The New York Academy of Sciences and held under the co-chairmanship of research scientists of Ciba Pharmaceutical Products, Inc., Summit, N. J. Ciba's reserpine drug, Serpasil, was used in these experiments.

STUDENTS ENTERING NURSING

More students entered schools of professional and practical nursing in 1954 than in any year since World War II, according to John H. Hayes, chairman, Committee on Careers, National League for Nursing.

Schools of professional nursing in the United States and territories admitted 44,930 new students, a 3.7% increase over the 43,327 students admitted in 1953. The 1,141 professional nursing schools reporting admissions to the National League for Nursing represent all state-approved schools offering three-year diploma or four to five-year degree programs in basic nursing education.

LEVOPHED AND NEO-SYNEPHRINE SUCCESSFUL IN SURGICAL SHOCK

A two-year study has demonstrated the vasopressor drugs Levophed and Neo-Synephrine to be "markedly successful" in the treatment of surgical shock at the Hertzler Clinic here, according to Dr. J. W. Welch.

Reporting in the *American Journal of Surgery* (88:922, 1954), he states that 50 patients who were victims of surgical or neurogenic shock were treated with Levophed or Neo-Synephrine, or both. All 30 patients given intravenous in-

fusions of Levophed "showed a positive and substantial pressor effect." In 28 of the 30 cases, Dr. Welch notes, transfusions, oxygen, intramuscular vasopressors and other supportive measures were administered prior to Levophed. The latter was given immediately in the remaining two cases because "shock was so precipitate and profound."

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BOOK REVIEWS

Psychomotor Aspects of Mental Disease; by H. E. King, Ph.D., Cambridge, Mass., Harvard University Press, 1954, Pp. 185, Price $3.50.

This is a series of systematic observations upon the psychomotor functioning of persons with mental disturbances. The purpose of this study is to examine in more detail the relationship between psychomotor functions and behavior disorders. The underlying theory is that movement is fundamental to living organisms and that body movements, while facilitated by biological mechanisms, also serve psychological purposes in that they bring the organism into exchange with his external environment and facilitate his struggle for adaptation. Fundamentally, this is a new and refreshing approach to the age old mind-body problem.

Six groups of matched subjects ranging from normal to severely disturbed psychotics were given a series of representative psychomotor tests. The findings indicate there is a demonstrable and consistent relationship between severity of disturbance and performance on these tasks. Two hypotheses are proposed to account for these findings: (1) "That the observed faulty psychomotor performance of subjects with a behavior disorder is a secondary, symptomatic reflection of a general blunting of performance, and participation by the patient . . . ;" and (2) "That the observed faulty psychomotor performance of subjects with a behavior disorder is a primary indication of disturbance in a basic adaptational process. . . . " The data from this experiment does not fully support the first hypothesis and further experiments are needed to verify the second hypothesis.

This work offers a method of evaluating mental disturbance in a quantifiable manner and also provides a theoretical framework from which more research can develop. Additionally, it includes the only comprehensive review of the literature available in this area. The book is well organized, succinctly and clearly written. The author's approach is constructively critical and intellectually honest. This is an important and progressive work for this area of investigation and should be of interest and value to psychiatrists, psychologists, neurologists, and neurophysiologists.

NANCY SIMMS

Practical Fluid Therapy in Pediatrics; by Fontaine S. Hill, M.D., Philadelphia, Pa., W. B. Saunders Company, 1954, Pp. 275, Price $6.00.

There was a time when the pediatrician realized the necessity of supplying fluid to dehydrated infants and children but the means by which he could do this was extremely limited. In the past two decades, however, the progress which has been made has almost reached a stage where it is not only easy to supply fluid but mineralization can be controlled in an exact way. Notable contributions in research and the clinical aspects of this subject have been made by Hartmann, Darrow, Gamble, and Butler.

This book supplies a definite need for a practical guide which will be found useful in supplying fluid therapy to all using it. It covers all of the basic physiologic principles and tells in an easily read style just how they may be fulfilled. Dr. Hill has made a most comprehensive study by consulting all of the worthwhile contributions by recognized authorities in the past decade.

The table of contents makes it easy to find the information wanted. This is followed by a glossary which no one will deny has been needed to define just what is meant in this increasingly used therapy. Seldom have we read a book which achieves its purpose so easily. This book should be on the desk of practitioners and specialists alike. It likewise seems to this reviewer indispensable to interns and residents in pediatrics.

ROBERT A. STRONG, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, N. Y.: Potassium Metabolism in Health and Disease, by Howard L. Holley, M. D., and Warner W. Carlson, Ph.D.

Little, Brown and Company, Boston: Ion Exchange and Adsorption Agents in Medicine; The Concept of Intestinal Bionomics, by Gustav J. Martin, Sc.D.

The C. V. Mosby Co., St. Louis: Surgery of Face, Mouth, and Jaws, by Frank McDowell, M. D., James Barrett Brown, M. D., and Minot P. Fryer, M. D.

W. B. Saunders, Co., Phila.: Nationwide Symposium on Rheumatic Diseases with 19 Clinics, (2nd Edit.); Fluoroscopy in Diagnostic Roentgenology, by Otto Deutschberger, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Hematology, by Cyrus C. Sturgis, M. D., (2nd Edit.); Doctors in the Sky, by Robert J. Benford, M. D., Colonel, Medical Corps, United States Air Force.

Year Book Publishers, Inc., Chicago: Surgery of the Small and Large Intestine, by Charles W. Mayo, M. D.

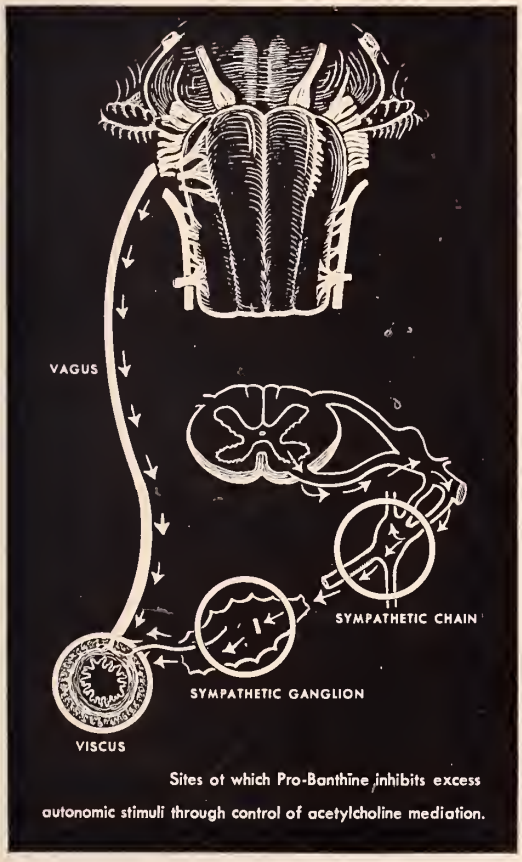
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Roback and Beal[2] found that Pro-Banthine orally was an "inhibitor of spontaneous and histamine-stimulated gastric secretion" which "resulted in marked and prolonged inhibition of the motility of the stomach, jejunum, and colon. . . ."

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Pro-Banthine (β-diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is available in three dosage forms: sugar-coated tablets of 15 mg.; sugar-coated tablets of 15 mg. of Pro-Banthine with 15 mg. of phenobarbital, for use when anxiety and tension are complicating factors; ampuls of 30 mg., for more rapid effects and in instances when oral medication is impractical or impossible.

For the average patient one tablet of Pro-Banthine (15 mg.) with each meal and two tablets (30 mg.) at bedtime will be adequate. G. D. Searle & Co., Research in the Service of Medicine.

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1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.

2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

SEARLE

A Summary of Recent Research*

Wine in Modern Medical Practice

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Some of the most important new research findings have been incorporated in a small brochure* specifically written for the medical profession. The booklet considers the role of wine in the treatment of the convalescent and the geriatric patient, as well as its use in the specialized fields of gastroenterology, cardiology, urology, etc. There is mention, too, of the psychobiologic effects of wine, such as its capacity to add a touch of interest and "elegance" to restricted or special dietaries.

A copy* is available to you, at no expense, by writing to:

Wine Advisory Board, 717 Market Street, San Francisco 3, California.

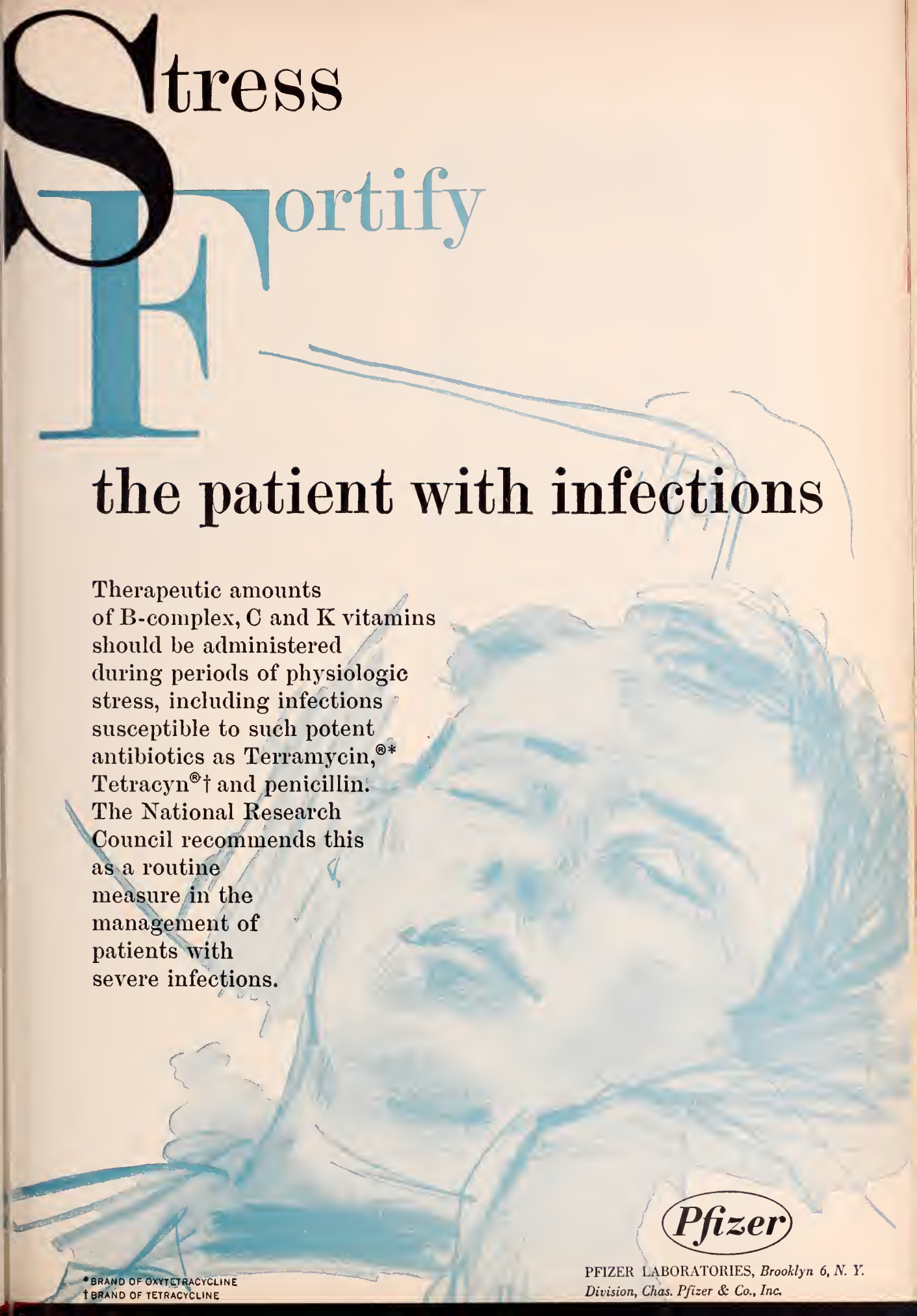
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2. Foot-so-Port losts were designed ond the shoe construction engineered with the ossistonce of mony top orthopedic doctors. We invite the members of the medicol profession to weor o poir — prove to yourself these stotements.

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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.:
J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.:
Brit. M. J. 2:755, 1953.

against ROUNDWORMS

"Ninety per cent of the children passed all of their ascarides . . ."

Brown, H. W.:
J. Pediat. 45:419, 1954.

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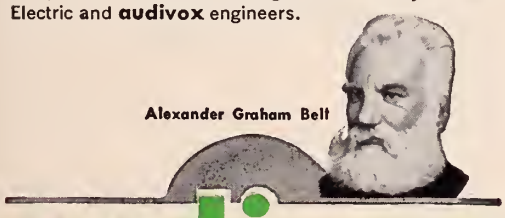
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*Bunim, J. J.: Research Activities in Rheumatic Diseases, Pub. Health Rep. *69*:437, 1954.

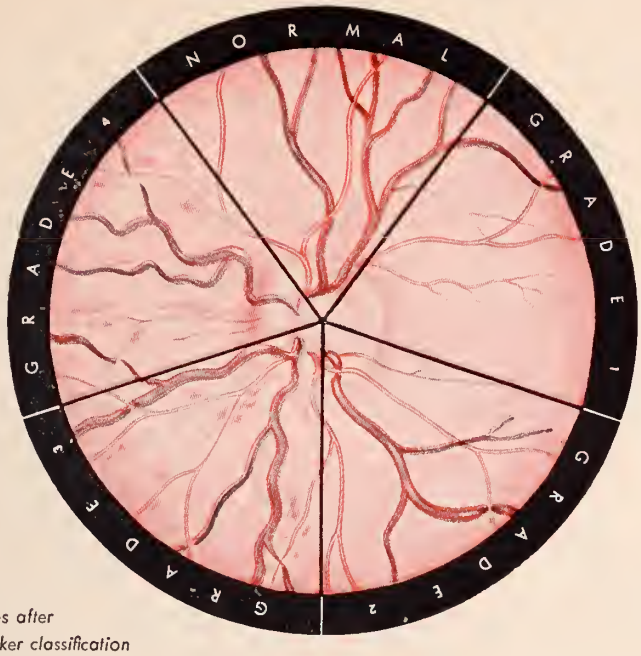


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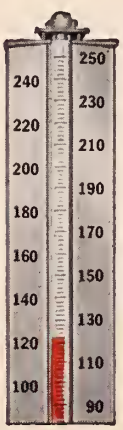
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REFERENCES: 1. Kroop, I. G., *N. Y. State J. Med.* **54**:2699, Oct. 1, 1954. 2. Heffer, E. T. *et al.*, *J. Pediatrics* **44**:630, June 1954. 3. Massell, B. F., *New England J. Med.* **251**:263, Aug. 12, 1954.

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Dates for the course: Friday, June 3rd and Saturday, June 4th from 8:00 a. m. to 5:30 p. m. each day.

Fee for the course will be $15.00, which will include luncheon on Friday. The fee for the course may be paid at the time of registration.

The course will be held in the L.S.U. School of Medicine's auditorium. Registration will be at 7:30 a. m. on Friday, June 3rd.

Physicians interested in taking the course should apply to Dr. Ian Stevenson, Chairman of the course, Department of Psychiatry, Louisiana State University School of Medicine, 1542 Tulane Avenue, New Orleans, Louisiana.



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In the last ten years, the ACS has devoted about $34,947,000 to cancer research.

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Working with these key investigators in research are some 3,000 younger men and women serving as technicians or training for larger responsibilities.

During the fiscal year 1954-55, ACS sponsored grants-in-aid will total 295, with an additional 49 institutional and special purpose grants.

In the past ten years, the number of grants-in-aid sponsored by the ACS totaled 2,025; institutional research and special purpose grants, 297; research fellowships and scholar grants, 513.

In 1954-55, ACS research funds are financing 79 fellowships and scholar grants to help train young investigators for research careers.

ACS grants are now operating in 36 states and the District of Columbia.

* From **1955 CANCER FACTS AND FIGURES** — American Cancer Society Bulletin.



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(1) Butler, A. M., and Wolman, I. J.: Quart. Rev. Pediat. 9: 63, 1954. (2) Moore, I. H.: Journal-Lancet 74: 80, 1954. (3) Collins-Williams, C.: J. Pediat. 45: 337, 1954. (4) Clein, N. W.: Ann. Allergy 9: 195, 1951.

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On or about April 12th Dr. Thomas Francis, Director, Poliomyelitis Vaccine Evaluation Center, is expected to release the evaluation report on the Salk Polio Vaccine field trials of 1954.

If the National Institutes of Health agree that the vaccine is safe and effective and license it, the National Foundation for Infantile Paralysis will provide the State Department of Health with enough vaccine to vaccinate the first and second grade children of each public, private and parochial school in Louisiana.

In addition Caddo, Bossier and Rapides Parishes will receive enough vaccine to vaccinate the second grade children of last year who were not vaccinated and the fourth grade children of this year. These parishes were the Louisiana field trial areas of 1954 and these children served as controls in last year's program.

Vaccine will be administered only to those children whose parents, in writing, request that the child be vaccinated.

The program this year is not to be another test. If the vaccine is licensed it will be the first use of a new preventive vaccine.

The State Department of Health, because of the short time remaining before the start of the current polio season, is going ahead with plans to vaccinate the children on the assumption that the vaccine will be licensed. This will permit earlier use of the vaccine if it is licensed.

Louisiana has approximately 180,000 children who are eligible for vaccination in the official program. Each of the children for whom vaccination is requested will receive 3 injections of 1 cc each of vaccine. The second injection will be given one week after the first and the third, one month after the second.



Louisiana State Department of Health

S. J. PHILLIPS, M.D., M.P.H.,

State Health Officer

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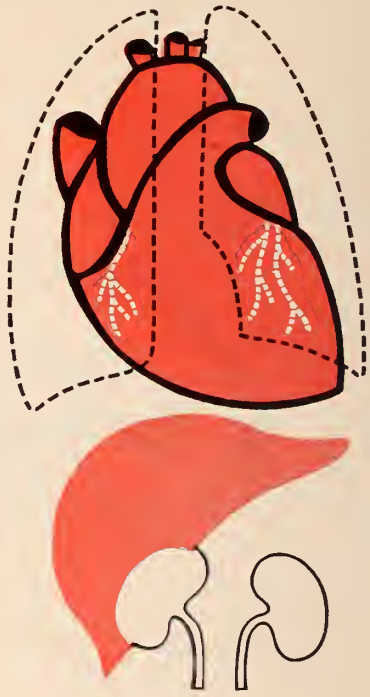
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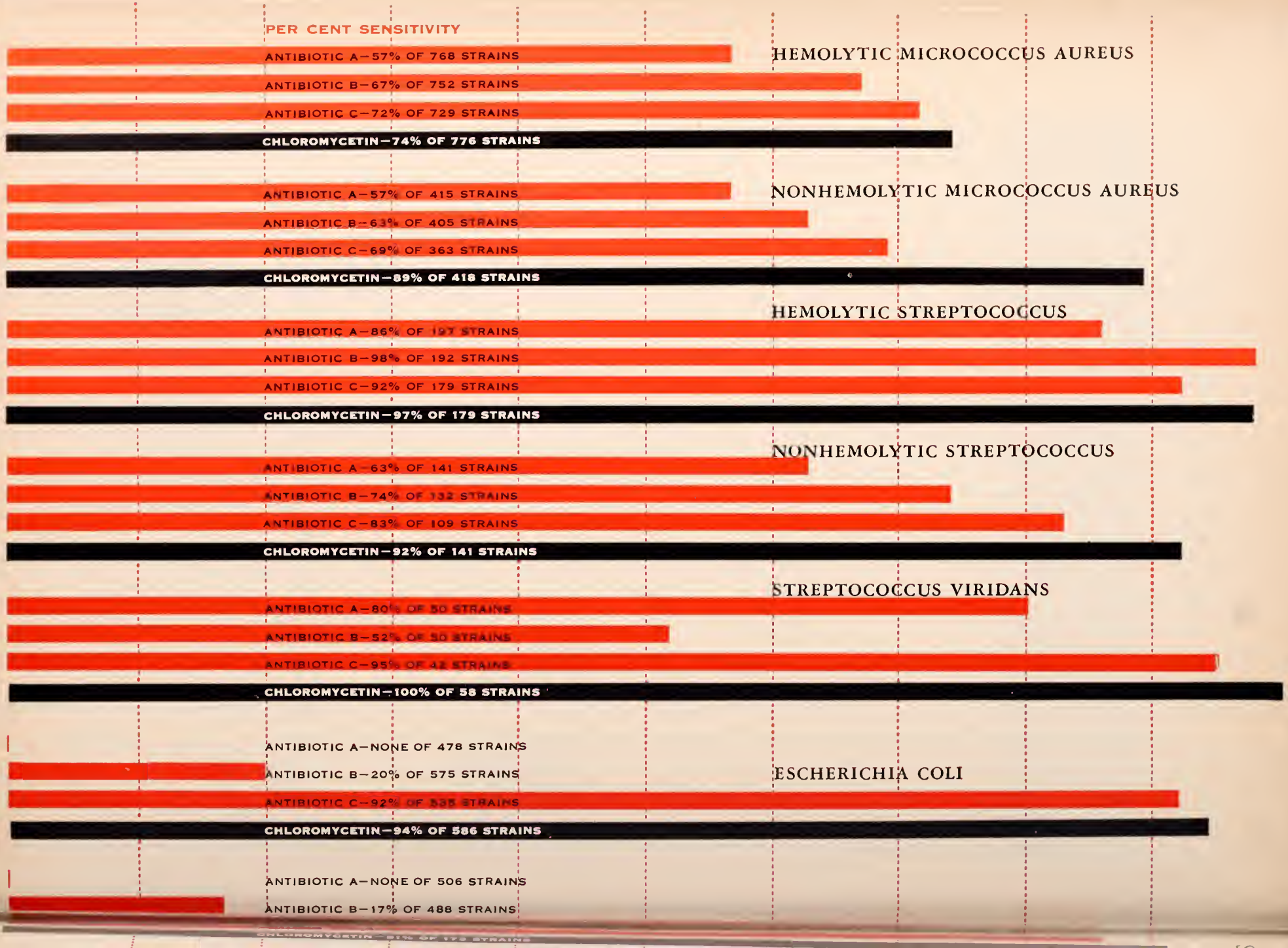
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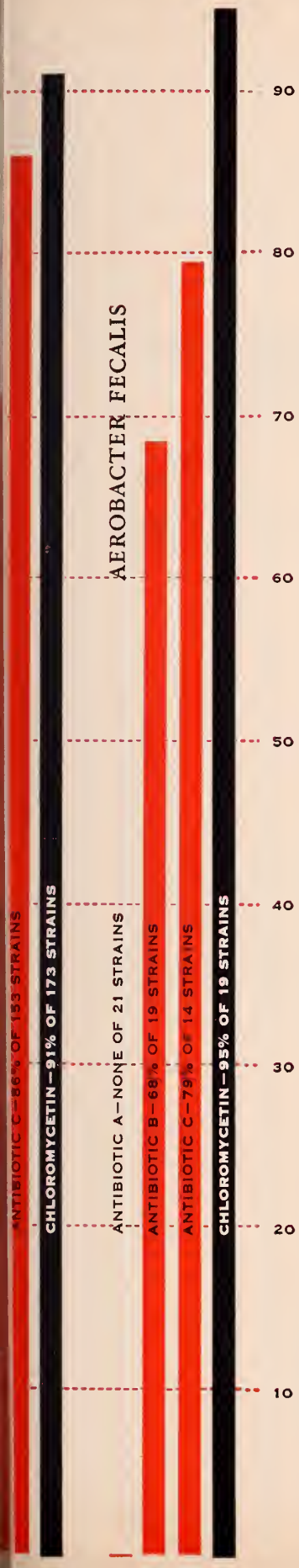
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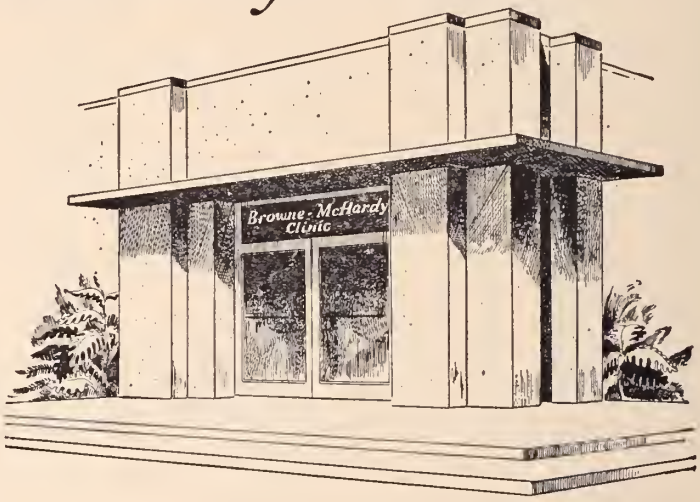
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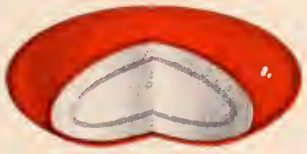
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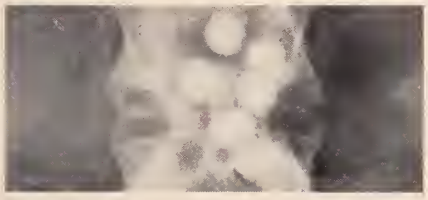
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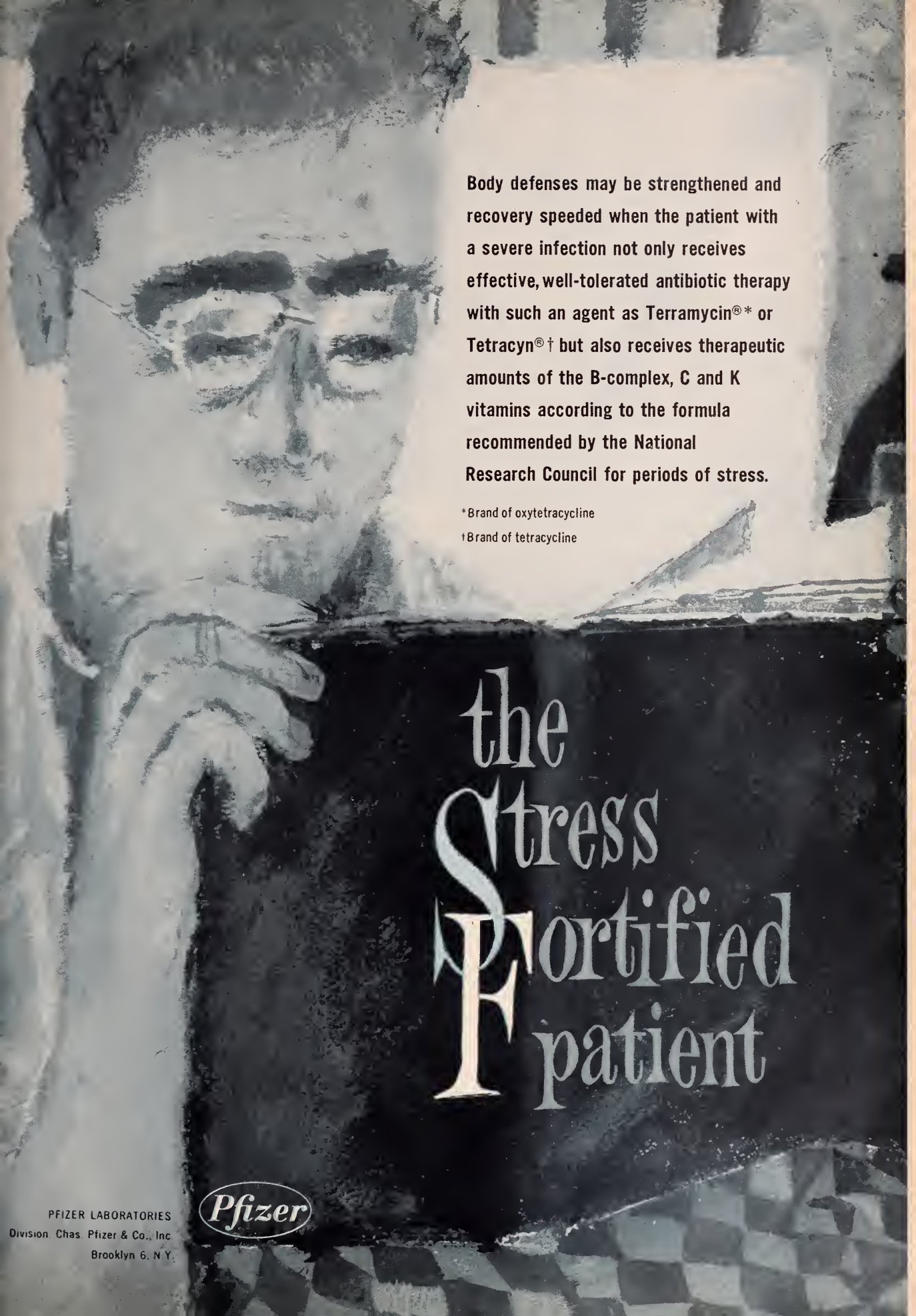
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14.0 grams for a man,
14.0 - 11.0 grams for a child (age variation)

and/or the hematocrit is less than:

35% for a woman,
42% for a man,
44.0% - 40% for a child (age variation)

and/or the red blood count (this is a notoriously, statistically inaccurate determination and should be carefully performed, at least with duplicate high grade pipettes and three chambers counted—Bureau of Standards calibrated) is less than:

4.2 million for a woman,
4.6 million for a man,
4.5 - 4.1 million for a child (age variation)

then the FINDING OF ANEMIA IS ESTABLISHED.

ANEMIA IS NEVER A DIAGNOSIS but a laboratory **finding** just as headache is a **symptom** and hepatomegaly is a physical finding. Anemia may be dignified by calling it a SECONDARY ANEMIA but one must not stop there or the patients' health and/or life may be jeopardized. Therapy directed toward "treating the red blood count" may only mask the condition.

A PRIMARY CAUSATIVE DIAGNOSIS MUST BE ESTABLISHED. The earliest finding of gastrointestinal cancer may be slight anemia and the blood findings may be "cured" by transfusion but the cancer grows larger. The cure of this anemia comes only through diligent examination leading to the real diagnosis, not of anemia, but of, for example, cancer of the right colon and following through with immediate surgery. The diagnosis of another type of case is not iron-deficiency anemia but cirrhosis with bleeding esophageal varices and proper medical regime for cirrhosis is begun. Another finding might be hypochromic normocytic anemia with a **diagnosis** of a carcinoma of the kidney. Normocytic normochromic anemia is a finding of multiple myeloma or Lupus Erythematosus. Multiple myeloma and Lupus Erythematosus are the diagnoses.

The laboratory determination of hematocrit, HGB or RBC may establish the finding of anemia and the Mean Corpuscular Hemoglobin (MCH), and Mean Corpuscular Volume (MCV) may establish the morphologic type; EACH TYPE HAS MANY PRIMARY CAUSES, however, and it is these causes which must be sought. There is no laboratory test that takes the place of a **careful history** and **complete physical examination.** This information is then supplemented with such findings as no free hydrochloric acid in the stomach or increased osmotic fragility or positive test for sickling or increased urine urobilinogen, or occult blood in feces, etc. Bone marrow study may aid in (1) classifying the anemia (2) indicating prognosis, or (3) revealing the definitive cause.

Remember it is far less expensive and more important in the long run to determine the type and cause of the Anemia, than to "treat the red cell count" with a variety of expensive "shot gun" drugs and injections. **DISCOVERY AND CORRECTION OF THE CAUSE OF THE ANEMIA, MAY SAVE THE PATIENT'S LIFE AND MONEY.**

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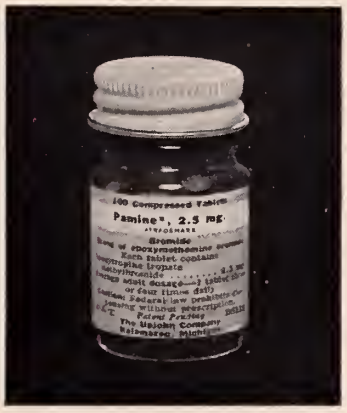
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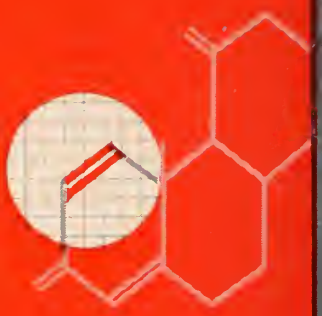
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CARDIAC RUPTURE

REPORT OF 12 CASES FROM THE SOUTHERN BAPTIST HOSPITAL, NEW ORLEANS, DURING A 10 YEAR INTERVAL

S. H. McDONNIEAL, JR., M. D. *
MARY HUMBRECHT, M. D. †
N. W. VOORHIES, M. D. ‡
NEW ORLEANS

While cardiac rupture can be produced by a diversity of clinical conditions, such as trauma, and rarely by pyogenic abscess, tuberculous lesion, gumma, echinococcus cyst, and malignancy,[1] it is more commonly a complication of acute myocardial infarction. It has been reported by Freedman and White [2] to occur in 9.5 per cent of cases of recent myocardial infarction from a large general hospital. Other surveys by Oblath, Levinson, and Griffith,[3] and Edmundson and Hoxie,[4] report a comparable incidence of rupture, 7.11 and 8.6 per cent, respectively.

We thought it would be of interest to report the cases from a large private hospital in this area as, to our knowledge, no such report has been made previously.

Of special interest and importance to the practitioner are the conditions which predispose to cardiac rupture, and the micropathology of the healing process after infarction. These will be discussed, as we feel that such knowledge is important in the prevention of this fatal complication.

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‡ Assistant Professor of Clinical Medicine, Tulane University of Louisiana, Medical School, New Orleans, La.

FINDINGS

A ten year survey of the records of Southern Baptist Hospital (1944-1953, inclusive) reveals 1315 consecutive autopsies, among which 114 (8.7 per cent) were found to have acute myocardial infarction as the cause of death. Twelve cases of cardiac rupture were found (11 into the pericardium, and 1 interventricular), an incidence of 10.5 per cent of all acute infarcts autopsied.

Ages of these patients ranged from 54 to 85 years; an average age thereby of 68.7 years.

All patients were of the white race.

The sex ratio of this group of cases is worthy of further comment, being, contrary to expectations, predominantly female (8 female, 4 male). This will be elaborated upon.

Among the 12 patients in this report there were only 2 whose weight-height ratio could unequivocally be called normal. Five were of borderline overweight (one of whom was described clinically as "obese"), and 5 were definitely obese.

Past History: In several of the cases the severity and short duration of the final illness precluded any evaluation of previous health. Hypertension of undetermined duration was recorded in 4 of the cases, previous infarct in 1, angina in 3, "long-standing" coronary disease in 1, and slight cerebrovascular accident in 2.

In none of these cases was the diagnosis of cardiac rupture made premortem, although it was suspected in 2 cases at time of death.

Myocardial infarction was diagnosed

TABLE 1
CARDIAC RUPTURE
SOUTHERN BAPTIST HOSPITAL, NEW ORLEANS
1944-1953, inclusive

Case	Age	Sex	Obesity	Past History	ECG	Duration from onset to death	Blood Pressure	Type and location of pain	Activity at estimated time of rupture	Location of infarct	Size and location of rupture	Amount of hemopericardium	Size of heart	Degree of coronary sclerosis	Old Infarcts
1. A.S.	76	M	Slight	----	No	4 days	120/64	Severe epigastric with nausea	?	Posterior left lateral	Same (size not given)	Pericardium filled	---	Extreme	No (fibrosis)
2. B.N.	70	F	Moderate	High B. P. for years	Anterior infarction	24 hours	166/100	Viselike precordial; radiation to rt. arm	?	Occlusion of lt. ant. descending coronary	2 cm. slit along course lt. ant. desc.	300 cc.	"Not abnormal in size"	---	Yes
3 A.C.	71	M	No	Long standing coronary disease	No	19 hours	124/80	Precordial	?	Occlusion of lt. ant. descending coronary	4 x 1 cm. apex of lt. ventricle	Filled	---	Moderate	-
4. B.F.	69	F	Slight	High B. P. Left hemiplegia	No	Unknown; disoriented	195/130	(?) None (gasping for breath)	Very active. Died just after a meal	Apex	1 cm. Apex	100 cc.	440 grams	Moderate	No
5. E.A.	63	F	Definite	Transient left hemiplegia, 3 yrs. prior PI	Posterior infarction	12 days	240/120 110/80	Substernal and left arm	Talking, joking, developed pain and expired	Posterior apex (left ventricle)	Upper portion rt. vent. 1.5 cm. from lt. vent.	Filled	450 grams	Moderate	No
6. M.H.	85	F	Slight	----	No	14 days	120/84	Cramping abdominal, 1 day	Asked for bedpan	Occlusion of lt. ant. descending coronary	.25 x 2.5 cm. Apex	1000 cc.	450 grams	Moderate	No
7. M.C.	75	F	Slight	"Heart attack" 6 yrs. prior to PI	No	13 hours	120/90	Precordial radiation to both shoulders	Restless and vomiting entire time in hosp.	Left anterolateral extending to septum	1.5 cm. irreg. laceration lt. ant. lat.	200 cc.	310 grams	Extreme	No
8. F.D.	58	M	Definite	----	3 done: 1. Normal 2. Pericarditis 4. Effusion	5 days	170/100 100/70	Precordial radiation left shoulder, left scapula	Dyspnea	Postero-lateral	3 cm. Postero-lat. lt. vent.	Filled	475 grams	Slight	No
9. L.S.	68	F	Definite	Similar pain 7 yrs. prior PI (bed 3 days)	Developing anterior infarction	11 hours	134/92	Chest, radiation lt. arm; both hands numb	Dyspnea	Anterior apex	2 small defects, (2 mm.) just above apex ant.	200 cc.	400 grams	Slight	No
10. L.T.	54	M	Definite	----	Anteroseptal infarction	(?) Died 7 hrs. after admission	124/70	Chest pain (not fully described)	Sleeping 15 min. before death	Anterior apex	5 cm. Ant. left ventricle	Surrounded by blood	450 grams	Moderate	No
11. A.R.	65	F	Definite	----	Extensive anterior infarction	53 hours	140/80 110/70	Chest pain	Sudden chest pain then shock	Anterior left ventricle and septum	1 cm. through septum and into pericard.	Massive clot	275 grams	Minimal	No
12. C.S.	71	F	No	----	Extensive anterior infarction	11 hours	95/68	Severe generalized abd. pain more on rt. Nausea & vomiting	?	Occlusion of lt. ant. descending coronary	1.5 cm. Septal perforation near apex	30-40 cc. bloody fluid	300 grams	Extreme	No

clinically in 9 cases, of which 5 had electrocardiographic confirmation: 3 anterior, 1 anteroseptal, and 1 posterior infarction. One clinically unsuspected infarct was demonstrated by an ECG taken ten minutes prior to death (Case No. 12: tracing, which showed extensive anterior infarction, was developed and interpreted postmortem).

The two cases not diagnosed either clinically or electrocardiographically will be discussed in a little more detail:

Case No. 6 (white female, M. H.) presented symptoms of productive cough and wheezing, and was responding well to therapy for congestive heart failure until her sudden respiratory arrest after asking for a bedpan. Infarction and myocardial rupture were unsuspected prior to autopsy.

Case No. 8 (white male, F. D.) was a diagnostic problem for eight months, with pain in the right upper quadrant, right flank, back, and legs; admission diagnosis was "disc syndrome". Five days prior to death he developed precordial pain radiating to the left shoulder. The diagnosis of renal tumor with venous spread to the heart was considered. Myocardial infarction and rupture of the ventricle were not diagnosed until autopsy. (Incidentally, the diagnosis of renal tumor with invasion of the veins was confirmed, but cardiac involvement by tumor was not found.)

The duration of illness in these cases, from onset of symptoms compatible with myocardial infarction until death, ranged from seven hours to fourteen days; 8 ruptured within the first four days. In one, symptoms were not present, and death was apparently instantaneous.

Elevation of blood pressure during the terminal illness was present in only 4 of the 12 cases; in 7 the blood pressure was normal or borderline, and in only 1 was hypotension found. These were, however, isolated readings taken at variable times during the final illness, and are not necessarily representative of the patients' usual blood pressure range.

In only 1 case was there no record of pain; that patient, however, was disoriented and hemiplegic, and a satisfactory history was not obtained. Of the remaining 11, character of the pain can be classified as follows:

Precordial: 4
- 1 with radiation to right arm
- 1 with radiation to left shoulder
- 1 with radiation to both shoulders
- 1 with no radiation

Substernal: 1, with radiation to left arm

"Chest": 3
- 1 with radiation to left arm; hands numb
- 2 with no radiation

Epigastric: 1, with severe nausea

Abdominal: 2
- 1 generalized, cramping
- 1 generalized, more on right; nausea and vomiting

It is interesting to note that only 2 of the 11 had nausea, and only one vomited; that patient (No. 12) was suspected to have either gastroenteritis or biliary tract disease, and expired undiagnosed.

Activity at the estimated time of rupture is difficult to ascertain. All cases were theoretically at bed rest; however, the mere physical limitation to bed does not mean that the patient is actually at rest. Several of these patients had been under physical or mental "stress" just prior to rupture. In 3 cases there is no record of activity, 2 were apparently quiet (one "sleeping" fifteen minutes before being found dead, and one stuporous but dyspneic). The remaining 7 patients had had variable and difficult to evaluate stress, such as chest or abdominal pain, urge to use the bedpan, talking and joking, and actively consuming a meal.

At autopsy all cases were found to have acute myocardial infarcts with rupture through the area of involved muscle. The anatomic locations of the infarcts are shown in Table 2.

Rupture occurred through the infarcted area in all cases. The case of interventricular rupture (No. 12) had ECG evidence of extensive anterior myocardial infarction. Upon gross examination the

TABLE 2
ANATOMIC LOCATION OF INFARCTS

Apical	1
Posterior apical	1
Anterior apical	2
Anterior left ventricle	5
Anterolateral left ventricle	1
Posterolateral left ventricle	2

infarct was found to involve the apical portion of the right ventricle, distal septum, and anterolateral portion of the left ventricle. A 1.5 cm. perforation had occurred in the distal septum, and blood had extravasated into the wall of the right ventricle; rupture of this area was impending.

The other 11 cases had definite rupture of the myocardium, with communication between the intracardiac and the extracardiac (pericardial) spaces. The defects ranged in size from 2 mm. to 4 x 1 cm. Case No. 9 had two small defects, each approximately 2 mm. in diameter, penetrating through the wall of the heart. None were described as "blowout".

The volume of blood in the pericardium in the 11 cases of frank rupture was measured in 5 cases, and ranged from 100 cc. to 1000 cc.; in the remaining 6 cases the pericardial cavity was reported to be "filled with blood".

Heart size and weight were not recorded in 2 cases; in a third case it was stated to be "not abnormal". The 9 cases weighed ranged from 275 to 475 grams. If normal heart weight is considered to be 250 to 350 grams, 6 of this group were unequivocally enlarged; the 3 within the above "normal limits" (275, 300, and 310 grams), when evaluated according to the patients' body size (height and weight) were also enlarged.

The degree of coronary sclerosis was described as minimal or slight in 3, moderate in 5, and severe or extreme in 3. One was not graded by the pathologist.

Autopsy evidence of previous or "old" infarction was present in only 1 case; a second case was reported as showing much fibrosis, but an actual area of infarction was not found. The remaining 10 cases had no evidence of former occlusion or infarction, although 1 of these gave clinical history of a "heart attack" six years earlier.

COMMENT

The age range (54 to 85 years) and the average age (68.7 years) of our cases compares favorably with other series reported in the literature.[2, 3, 5-9] Spontaneous rupture following acute myocardial infarction rarely occurs under 50 years of age.[3, 6] As reported by Kelley et al[10] this disaster has occurred as early as 3 months of age. However, the underlying pathology in their case was an anomalous left coronary artery that arose from the pulmonary artery.

It is worthy of comment that in our series there was a predominance of female patients. Oblath et al[3] and Gans et al[8] also reported groups of cases in which there was a predominance of women. In large collections of cases from the literature such as that reported by Krumbhaar and Crowell[6] there is a predominance of males. When compared to the incidence of acute myocardial infarctions there is, however, a higher relative incidence of spontaneous heart rupture in the female.[3, 8, 11] Wessler et al[11] attributed this to the lower incidence of coronary disease and the higher incidence of hypertension among women.

Underlying and contributory causes for spontaneous heart rupture have been the subject of much discussion. This catastrophe is rare except in the presence of pre-existing acute myocardial infarction.[2, 3, 5, 9, 11] Several authors[3, 4, 6-9, 11] have studied and discussed the reasons why some hearts with acute infarction rupture, and others do not rupture.

It is now well recognized that increased activity following acute myocardial infarction definitely increases the incidence of heart rupture. Jetter and White[9] in their report of cases occurring in mental institutions showed a much higher incidence of heart rupture (73 per cent of deaths from acute myocardial infarction) among these people in whom activity was totally uncontrolled because of their mental illnesses. Others have commented upon the

increased incidence of heart rupture with increased activity following acute infarctions.[3, 5, 7, 11] It is interesting to speculate upon the effect of the "armchair" treatment of myocardial infarction as advocated by Levine and his group[12] upon the incidence of heart rupture in these individuals. Strict adherence to their routine probably would not influence the rate of occurrence of heart rupture because, as they emphasize, they do not advocate early ambulation, but rather a different approach to management at rest. The present trend toward early ambulation of the patient who has the so-called "small infarct" and does well clinically may prove to be a dangerous procedure when more follow-up studies have been done. Edmondson and Hoxie[4] pointed out that in their series the infarcts of ruptured hearts tended to be smaller and more necrotic than those that did not rupture. The infarct was frequently surrounded by otherwise healthy muscle. These authors also indicate that in the presence of the scar of a healed infarct the incidence of heart rupture is only one-fourth as great as would be expected.

None of our patients had been ambulatory between onset of the infarction and death. One patient died shortly after eating, one while talking to a relative, one shortly after asking for a bedpan, and a fourth had been vomiting and restless during the entire hospital stay. All others were presumably at rest, and one patient was asleep at the time of death. Hence, activity does not appear to have been a prominent causative factor in our cases.

Sustained hypertension following infarction has been shown by several authors[3, 4, 5, 7, 8, 11] to increase the probability of heart rupture. Howell and Turnbull[7] and Edmondson and Hoxie[4] compared blood pressures in patients dying of cardiac rupture and patients with acute myocardial infarction who died without rupture. In both instances the authors were able to demonstrate a higher percentage of cases with blood pressure above 140/90 among those who died of heart rupture. Oblath et al[3] state that with persistent hypertension the danger of heart rupture complicating myocardial infarction is increased threefold. In 4 of our cases (33.3 per cent) blood pressures above 140/90 were recorded in the hospital record. In a fifth case a diastolic pressure of 92 was recorded.

Eight (66.7 per cent) of our cases ruptured within four days (seven hours to four days) of the onset of the infarct, one on the fifth day, one on the twelfth day and one on the fourteenth day. In the remaining case it was impossible to tell from the record when the infarct occurred, because the patient was disoriented from the time of admission and no history of onset of infarct was available. Oblath et al[3] found that 45 per cent of their series ruptured within the first three days and 78.75 per cent ruptured by the twelfth day. Howell and Turnbull[7] reported 8 cases, all of which ruptured within eleven days. Friedman and White[4] reported 10 cases, all of which ruptured within two weeks. Diaz-Rivera and Miller[5] found that their 5 cases died within thirteen days of onset of infarction. Seventy-eight per cent of those in the series reported by Edmondson and Hoxie[4] died between the third and twelfth days. The time of rupture in our group follows essentially the same pattern as reported by these authors.

When one reflects upon the microscopic pathology of acute myocardial infarction as described by Mallory et al,[13] it is expected that the greater percentage of heart ruptures should occur within the first few days after onset. We feel that it is appropriate to review some of their findings at this point. Necrosis begins immediately, is greatest at two to six days, and may last as long as four months. Hemorrhage is variable and usually limited. Polymorphonuclear cells appear immediately, increase to the fourth day, then gradually decrease to disappear about the fourteenth day. Ingrowth of capillaries and connective tissue cells begins about the fourth day. Fibrin is absent. Removal of necrotic tissue begins about the fourth day. Collagen first appears about the

twelfth day and reaches a maximum by two to three months. Collagen especially, and connective tissue, add strength to the healing infarct. However, they point out that the rate of healing of an individual infarct is influenced by its size, location, and the adequacy of collateral circulation. From these findings one readily sees that the infarcted area is weakest during the first few days. If polymorphonuclear cells increase liquefaction, then the fourth to the sixth days should be the time at which the infarct is weakest and hence the time at which most heart ruptures occur. The times of rupture of our group fall into a pattern that is compatible with this pathological description.

The pain experienced by patients in this group was no different from the usual severe pain of coronary occlusion. Two of our patients experienced severe pain at the time of death. No diagnostic symptoms were revealed in the histories of these patients. Bishop and Logue[14] reported a case of external rupture that developed a systolic murmur and thrill suggestive of septal rupture. Askey and Cherry[15] in their study attempting to evaluate diagnostic features felt that an antemortem diagnosis of external rupture is very difficult but that septal rupture may be diagnosed prior to death. It is therefore felt that the signs and symptoms of heart rupture are indistinguishable from those of acute coronary occlusion, and that heart rupture is a difficult antemortem diagnosis.

The effect of digitalis therapy upon heart rupture in myocardial infarctions is a much discussed subject. Oblath et al[3] felt that digitalis had no effect in their series. Two of our patients were taking digitalis preparations at the time of death. It is our feeling that when there is a definite therapeutic need for digitalis in the presence of an acute infarction that it should be used.

Our group of cases gives no help in determining the possible effect of anticoagulants upon heart rupture. Only one of our cases received an anticoagulant (ethyl biscoumacetate), and only a single dose (150 mgm.) approximately three hours before death. This drug could have had little or no effect in that period of time. Anticoagulant therapy in acute myocardial infarction has been widespread in recent years.[16] Russek and Zohman[17] in a recent survey found that there is still much conflicting opinion about the use of these drugs. As reported by Goldstein and Wolff[18] hemopericardium may develop as a complication of anticoagulant therapy. Flaxman[19] reports that these drugs lead the list for fatalities caused by oral medications. These fatalities are, as one would expect, almost all from hemorrhagic complications. Gans[8] mentions the possibility that anticoagulants may influence the incidence of heart rupture. Clagett et al[20] feel that anticoagulants do not increase the rate of rupture, but suggest that analysis of a larger series of cases is needed before drawing final conclusions. Waldron et al,[21] in a recently reported study, were able to demonstrate a significantly higher incidence of heart rupture following acute infarction in cases that were treated with anticoagulants. They also demonstrated a higher incidence of hemopericardium without rupture when anticoagulant therapy was used. Anticoagulants are valuable drugs in the treatment of acute myocardial infarction, but one must be aware of their dangers before prescribing them.

The rupture in our cases were linear tears for the most part. Ten were of this type, one was septal and one showed two very small (2 mm.) perforations. The size, shapes, and positions of the ruptures found in our cases are similar in most respects to those reported by others.[2-9] No instances of the so-called "blow-out" rupture and no instances of right ventricular rupture were seen in our group.

SUMMARY AND CONCLUSION

1. Twelve cases of cardiac rupture from the Southern Baptist Hospital, New Orleans, are reported and described. The incidence of rupture was 10.5 per cent of acute infarctions.

2. It would seem that since most ruptures occur within the first week and

nearly all within the first two weeks, and since the incidence of rupture is increased by unrestrained activity, the physician is justified in insisting on at least three weeks of complete rest. This would apply equally to the so-called small infarct, particularly when the blood pressure remains high after infarction.

3. Anticoagulants carry a definite risk in addition to the systemic effects of the drug. The occurrence of cardiac tamponade, as well as the increased frequency of rupture, limits the usefulness of this drug in the care of the patient with acute myocardial infarction.

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RADIATION TREATMENT OF NONMALIGNANT CONDITIONS *

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The use of roentgen rays and radium in the treatment of malignant conditions has assumed such a large place in the therapy of these lesions that many forget that there are nonmalignant conditions which can be equally well treated with these modalities. The dermatologist, of course, is well acquainted with the value of roentgen rays in the treatment of many nonmalignant skin conditions, but many physicians are not sufficiently acquainted with the use of roentgen rays for these nonmalignant disorders to gain for their patients the benefits that will accrue from careful treatment. In the time at our disposal today I hope to go over with you a few of the conditions which can definitely be benefited by radiations, and which do not come under the heading of malignant tumors. The first group which I wish to discuss can be classified as tumors, however. These may be of the pituitary gland, of the nasopharynx, of bones, such as giant cell tumors, hemangiomas, lymphangiomas, keloids, etc.

PITUITARY ADENOMA

Pituitary adenomas are divided into three main groups: The acidophilic, basophilic and the chromophobic. The acidophilic pituitary adenoma produces the growth hormone. If this occurs before the epiphyseal lines are closed the patient becomes a giant. If he has already reached his growth and the epiphyses are closed, he becomes an acromegalic. Cushing's basophilism, so-called, is apparently pro-

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duced by basophilic adenomas of pituitary. These patients have the cardinal symptoms of hirsutism, abdominal striae, peculiar fat distribution, hypertension, etc. The chromophobic adenoma is nonhormone producing, but by its size may cause sufficient pressure on the anterior portion of the pituitary to decrease its normal hormone production. By their size, both acidophilic adenomas and chromophobic adenomas may cause pressure symptoms on the optic chiasm with bitemporal field cuts. This is almost always true with the chromophobic type, but occurs in only about 50 per cent of the acidophilic tumors. The chromophobic adenoma produces increase in the size of the sella in almost all cases, whereas the acidophilic produces it in only about one-half, while the basophilic tumor never shows an increase in the size of the sella turcica. In my opinion, the best primary treatment for pituitary adenomas is radiation. It should be delivered through several fields about the skull, given slowly until an estimated tumor dose of from 2500 to 3000 roentgens has been delivered. It is of value to have visual field studies taken at weekly intervals during treatment in order to ascertain whether or not there is gross change. It should be remembered, however, that an increase in the field cuts during treatment is of no significance and should not make one stop the treatment. It is of the utmost importance, however, to have the patient return in about two months for further studies of the visual fields and observation of his general condition. If, at that time, there is increase in the visual cuts, the patient should be immediately referred to the neurosurgeon for his care. I think that all of *these* patients should be operated upon, since the tumor which has been treated is likely to be cystic, and these cystic tumors do not respond well to radiation. If, however, the visual field cuts have not increased or have decreased, then the patient may be watched. Approximately 70 per cent of patients with these tumors will do well with radiation, and ordinarily a good result remains permanent. We have, however, had two or three cases in which there was a good result for from one year to five years, with then a recurrence of the tumor as shown by increasing symptoms. These patients should then be operated upon. In no case have we observed any hypopituitarism from irradiation.

CRANIOPHARYNGIOMA

Craniopharyngioma or suprasellar cyst is a lesion which is not ordinarily considered radiosensitive. It occurs in childhood or early adult life and is a developmental defect. Its symptoms are those of a mass in or above the sella. It is usually at least partially calcified. There is reason to believe that if the fluid can be aspirated and irradiation given to prevent the re-formation of fluid, this may be successful. It has proved to be so in some cases with the use of roentgen rays, and a recent personal communication from Woods and Hiebert indicates that injection of radioactive gold into the cyst may well prevent the re-formation of fluid by the radiation from the Au-198. This may be a very valuable addition to our methods of treatment of this condition.

NASOPHARYNGEAL FIBROMA

Nasopharyngeal fibroma or sclerosing capillary hemangioma of the nasopharynx is a lesion which occurs in young males from 12 to 18 years of age. These tumors may be firm or somewhat friable, may bleed without trauma, and are found to be rather vascular at the time of biopsy. They destroy adjacent tissue only by pressure and are not malignant tumors. They are said by many to regress spontaneously with the advent of puberty, but in our experience, this is not usual. Even the cases to whom we have given testosterone and who have had early maturity because of this have shown no regression of their tumors. The basic treatment of these lesions is surgery, but this can usually not be done until the lesion has been so sclerosed and reduced in size by radiation that operation becomes feasible. The treatment is best given by interstitial radium needles or by radon seeds, with a delivered dose of 4000 to 5000 gamma

roentgens. Surgery may then be done without danger of exsanguinating hemorrhage.

CAVERNOUS HEMANGIOMAS

Cavernous hemangiomas are not an uncommon lesion in infancy and young childhood. In our experience they occur at least 85 per cent in girls. They may be present at birth or appear shortly after. They may show rapid, spontaneous disappearance or they may continue to grow rapidly. It is said by many that these all will disappear spontaneously without any treatment. Although I am sure that this is frequently the case, there are many whose lesions increase to such size that something must be done for them. I think any hemangioma which is obviously increasing in size should be given some type of treatment, preferably radiation. Our treatment generally consists of giving about 300 roentgens, using a Chaoul contact therapy unit, although conventional low voltage units may be used. We then wait six to eight weeks before seeing the patient again. If there is any sign of regression of the lesion, no further radiation is given. If there is still an advancing edge, the treatment will be given to this active portion of the lesion. All that we try to do is to have the lesion start in the proper direction and then let the child take care of it naturally. A minimum amount of radiation is desirable. Some large and deep hemangiomas which are fed by large vessels will not respond satisfactorily to superficial treatment. The smaller vessels may become sclerosed but the larger ones will not, in general, be touched, and many of these have to be taken care of by surgical excision. In regard to lesions around the eye or in rather inaccessible places where roentgen therapy is difficult, irradiation may be given by the implantation of radon seeds. Gold filtered radon seeds with a content of about one-tenth to fifteen (0.1 to .15 mc.) hundredth of a millicurie are usually sufficient to cause rapid regression of the lesion.

GIANT CELL TUMORS OF BONE

Giant cell tumors of the bone have for many years been treated by irradiation. Formerly, they were treated with large doses and some ill effects have resulted, even to the development of osteogenic sarcoma in the irradiated site. Giant cell tumors may also be subject to malignant change. This was either present at the time of the first examination and remained unrecognized, or it developed after a course of treatment, either surgical or radiologic. My present concept regarding the best treatment for accessible giant cell tumors is that they should be treated by surgery, and irradiation used only if surgery proves to be ineffective. For lesions in relatively inaccessible portions of the body, such as the spine or portions of the pelvis, it seems that radiation is preferable as the primary treatment. In those cases we give from 600 to 1000 roentgens as measured in air, giving 200 roentgens a day on four or five consecutive days. Further treatment is not given for at least two months, and then only if there is no good evidence of healing of the lesions.

KELOIDS

Keloids are not considered generally as basically tumors, but they are masses of fibroblastic tissue which develop at the site of trauma and which tend to recur after excision. If these can be seen in the early succulent stages, irradiation is very valuable. A single dose of about 800 air roentgens given to the keloid itself with protection of the surrounding skin is quite effective. If the lesions are large, such as follow extensive burns, the dose is reduced to about 600 roentgens. Even in old sclerosing cases, which have developed intractable itching, a small amount of radiation—300 to 400 roentgens—may be sufficient to relieve the patient of all his symptoms. When a keloid is excised and replaced by a linear incision, it is wise to irradiate the incision with *about* 800 roentgens to prevent further keloid formation.

BURSITIS

A great deal has been written regarding radiation treatment of bursitis. I think frequently, however, that this term is a

misnomer and should be called "painful shoulder or elbow," because many times there is no bursitis but pain is or may be due to degenerative changes in the supraspinatous tendon. Regardless of the exact etiology, this lesion is a painful and disabling one, and for days may prevent normal rest at night and function during the day. There are those skeptics who say that no matter what one does for this condition a good result follows, or vice versa, and I am sure that many times this is the case if one waits long enough. For one who is in severe pain and disability, however, the application of a small amount of radiation—100 roentgens or possibly 200 roentgens, or even only 50 roentgens if the process is very acute—gives almost a miraculous relief of pain, and usually the pain does not recur except as a new episode. Orthopedists are somewhat loathe to use this method of treatment and prefer heat, massage, and both passive and active motion. Most of the cases which we receive from them have gone into the subacute or chronic stage when radiation therapy is reduced in its effectiveness to about 50 per cent. If one is to use radiation, however, it is important to keep the shoulder not immobilized but confined to the range of motion which is not painful to the patient.

SPONDYLITIS

Another condition of the bone and joint system is ankylosing spondylitis of the rheumatoid type — so-called Strumpell-Marie or Von Becterew. This condition, as you know, is the one which produces a great deal of pain and disability in the spine and which eventually leads to a "poker" spine. Irradiation in the early cases of this disease are frequently and almost uniformly followed by prompt relief of pain which relief may last for a matter of years. Instead of having excruciating pain, spasm and disability, the patient may have only a mild ache or stiffness. I am convinced, also, that radiation treatment for this disease not only affects the pain, but changes the course of the process. The treatment consists of three, four, or five times 200 roentgens, as measured in air, given to the affected area. These treatments may be given on consecutive days or once a week. The benefit is indeed striking at times. The pain from involvement of rheumatoid arthritis of the extremities can also be alleviated by small doses of radiation, but the duration of the relief seems not to be nearly as long as with the spondylitis. The disabling pain from osteoarthritis or degenerative joint disease is also sometimes relieved, but this is only in a small fraction of the cases. I would suggest, therefore, that in all cases of spondylitis in the young individual, a course of radiation be given with the hope that not only the pain may be relieved but the course of the disease altered favorably.

SYRINGOMYELIA

Syringomyelia is a condition which consists of a diffuse gliosis of the spinal cord with resultant cyst formation and the inevitable symptom complex which accompanies this condition. The only method of surgical attack is the opening of large cavities and evacuation of their fluid content. This, of course, is a temporizing measure since the cysts will again fill with fluid and cause recurring pressure. It has been found in some of these cases that irradiation given in the amounts of six times 200 air roentgens to the involved portion of the cord will relieve the symptomatology and hold it in abeyance for a matter of many months or even years. When there is a recurrence of symptoms the treatment may be repeated. It is well to warn, however, that not more than about three such courses of treatment should be given and then only with the greatest caution, since they may be followed by a cutaneous breakdown over the spine. I have, however, seen patients come up to our department bedridden and by the time they were finished with their treatment, were walking back and forth. This rapid improvement, however, is unusual but many cases of lesser degrees of improvement have been encountered. It is well worth the trial.

UTERINE BLEEDING

The question of uterine bleeding is suf-

ficiently broad so that it might cover several hours of dissertation. I shall, therefore, discuss only briefly some of the indications for the use of radiation in the treatment of uterine bleeding of nonmalignant character. As a general statement, I think it is fair to say that only climacteric bleeding or bleeding associated with fibroids at the approximate age of menopause can justifiably be treated by irradiation. At the outset, however, I would like to warn against the indiscriminate use of irradiation for uterine bleeding until every vestige of a chance of the bleeding being due to a malignant tumor has been eliminated. Careful pelvic examination and careful segmental curetting of the uterine cavity and the endocervix should be done to rule out a malignant tumor. Omission of this simple examination may lead to disastrous results. There is considerable discussion these days regarding the value of roentgen sterilization. The main consideration being raised is that perhaps this type of treatment does not eradicate all ovarian function. This may perhaps be true, but since we are talking about uterine bleeding and not castration, I can say with assurance that a dosage to the ovaries of around 600 to 800 roentgens is sufficient to stop menorrhagia or menometrorrhagia. I believe that roentgen sterilization is superior to sterilization by intracavitary radium, particularly if there are any uterine fibroids. These may so displace an ovary that the radiation from the uterus is ineffective and sterilization is not obtained. Also, the use of radium ordinarily requires dilatation of the cervical canal and I have seen cases where this procedure has resulted in a parametritis. Neither of these poor results follows external radiation properly given. I shall not discuss the use of roentgen rays in the treatment of the ovaries as an adjunct to the treatment of a malignant neoplasm. Under certain circumstances it may be completely justified to irradiate the ovaries in cases of endometriosis, however.

INFLAMMATORY CONDITIONS

For a great many years roentgen rays have been used in the treatment of certain inflammatory conditions. Before the discovery of the sulfonamides and the antibiotics, it was almost routine to treat such infections as erysipelas, boils, and certain carbuncles with small doses of irradiation. The results were quite striking. Before the advent of this chemotherapeutic age, also, many cases of pneumonia were satisfactorily treated by radiation. At present, however, it would be folly to take a patient from his bed in a ward to a department of Radiology in order to give him radiation therapy when he could be treated adequately and just as well, and if not perhaps better, in his own bed. There are, however, a few remaining inflammatory lesions which still seem to respond better to radiation than to any chemotherapy which is at present available. Among these I would like to mention only two. The first is acute or subacute thyroiditis. This condition, as you know, is manifest by swelling and pain in the thyroid gland accompanied by fever, difficulty in swallowing and general malaise. The BMR may be elevated and the patient present all the signs of thyrotoxicosis. An important diagnostic test is the radioactive iodine uptake studies which are exceedingly low in this condition. Antibiotics and other chemotherapeutic measures seem to have little, if any effect, on this condition. It responds promptly and well in almost all cases, however, to small doses of irradiation given to the affected gland. In the very acute cases we give 50 roentgens to each side of the thyroid to include the isthmus, using intermediate voltage. If, on the following day, there is evidence of improvement (and there usually is), the dosage is raised to 100 roentgens to each lobe of the thyroid. This is continued until a total of about 450 roentgens, as measured in air, are given to each side of the neck. The results in most cases are dramatic, although there are cases who have only partial subsidence of their symptoms. The febrile reaction disappears, the tenderness of the gland vanishes, but its size does not perceptibly change during the

course of treatment. Some of these patients may have recurring episodes in the opposite lobe if at the first time only one lobe of the gland is involved. A second course of treatment is well tolerated. Thyroiditis is frequently followed by hypothyroidism. When this occurs, it is well to remember that it is due to the disease and not the treatment.

The second inflammatory condition which I wish to discuss briefly is that of postoperative parotitis. This condition, as you know, is most commonly found in the elderly and debilitated patients following major operations, although it may occur in the young. There is gross swelling and tenderness of the parotid, either unilateral or bilateral, and the patient has a febrile reaction. The treatment of this condition is not confined to radiation, but radiation has a large place in its care. It is important that the patient have a proper fluid balance, that the parotid gland and duct be gently massaged toward the ductal orifice and that the patient be encouraged to chew and to suck acid foods, such as lemons, etc. These are very important parts in the treatment of this serious disorder. Results are not uniformly good, but this is usually because the patient is debilitated, elderly and in poor condition generally.

EYE LESIONS

For many years, low voltage roentgen rays and beta rays from radium have been used in the treatment of lesions about the eye. With the discovery of the radioactivity of Sr. 90 with its emission of beta rays, this has become the mainstay in the treatment of nonmalignant conditions about the eye. I shall discuss none of these in detail but merely mention that lesions as certain corneal ulcers, pterygia, new vascularization, small hemangiomas and lymphangiomas, etc., may be greatly benefited by judicious use of this form of radiation.

As you can see, therefore, from these few examples discussed briefly, radiation is an effective agent in the treatment of many nonmalignant conditions and deserves greater consideration in their care.

THE DIAGNOSIS AND MANAGEMENT OF CONGENITAL CYSTIC DISEASE OF THE LUNG

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BATON ROUGE

Pulmonary cysts arising on a congenital basis have only recently become recognized as not only an interesting pathological entity, but as a fairly frequent cause of pulmonary disease and disability. Congenital cysts of the lung, more often than not, tend to masquerade as other pathological conditions. Many cases of unresolved pneumonia, refractory empyema, tuberculosis, suspected carcinoma, bronchiectasis, etc., are in reality infected congenital pulmonary cysts. Failure to recognize or consider this possibility often results in prolonged and ineffectual treatment.

In the American literature there was no interest in congenital cystic disease of the lung until Koontz's article appeared in 1925. However, Sauerbruch earlier wrote extensively of this entity in the German literature, and reported his findings in 58 resections performed in children. With increased recognition of this condition, much confused and conflicting thinking has resulted. There have been innumerable published classifications, with little attempt at clinical-pathological correlation. As a result, congenital cysts are often grouped under the acquired cysts of the lung. The latter should in reality be considered separately. Probably one of the best working classifications is that of Dickson:

I. True developmental or so-called congenital cysts of the lung.

II. Acquired cysts, or cystlike cavities of the lung.

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A. Cystic bronchiectasis
B. Other pulmonary cysts
   1. Pneumatoceles
   2. Abscess cysts
   3. Emphysematous blebs
   4. Emphysematous bullae

EMBRYOLOGY

When the developing lung buds grow out from the primitive foregut of the embryo, their normal development may be altered at any point. If this occurs, at an early stage, a fragment may be pinched off near the trachea, and a mediastinal bronchial cyst left. If a more substantial part goes astray, an entire sequestrated lobe may result. If alteration of normal development occurs peripherally, solitary or multiple smaller cysts are formed. The cysts are always lined by columnar, ciliated, mucus producing epithelium, and may or may not be connected to the bronchial tree. The cysts generally contain a turbid, milky fluid at birth; if there is a communicating bronchus, they will contain air. The communicating cyst is always a receptive focus for secondary infection.

There are associated congenital anomalies in about 15 per cent of cases, the most common being accessory lobe, aberrant systemic arteries, and anomalous venous drainage.

SYMPTOMS

The symptom complex of congenital cystic disease of the lung is best expressed by the natural history of the cysts themselves and is largely the symptoms of their complications.

1. Inflation
2. Infection
3. Bleeding

If neither of the three above sequelae occur, the patient may be symptom free for many years, but with the ever present possibility of later grave complication.

Inflation: The communicating bronchus may run a tortuous course through the cyst wall, and owing to some mechanical change, such as kinking or retention of mucus, it comes to act as a check-valve, allowing air to enter but not leave the cyst. This progressive inflation causes a "giant cyst". The pressure inside is positive, it may displace the mediastinum and by pressing on adjacent vital structures threaten the patient's life. They are most often seen in young children and in the newborn, who are easily embarrassed by the resultant compression of lung tissue. A giant cyst may be easily mistaken for pneumothorax, and needling the cyst may produce a resultant true tension pneumothorax. Recurring bouts of dyspnea and cyanosis in young children should make one aware of the possibility of underlying cystic disease.

Infection is probably the most common disabling feature and causes the entire gamut of symptoms that characterize pulmonary infection and are common to the infectious pneumonias, bronchial obstructive pathology, lung abscess, etc. If the bronchus communicates there will be expectoration of purulent secretion. There are always varying degrees of pleural pain, temperature elevation, cough, and generalized weakness. Unless the prime cause, cystic disease, is thought of and treated, the patient is often subjected to prolonged, expensive, and ultimately, ineffectual programs of therapy.

Bleeding is more often the result of low grade, chronic infection within the cavity of the cyst, and may assume threatening proportion. It is not unusual to see exsanguinating hemorrhage from these cysts, which show on dissection extensive arterial and venous collaterals within their walls, with marked increase in the calibre of these submucosal vessels. Bronchoscopy is most helpful in localizing the bleeding site, and should always be done, if possible, during the bleeding phase. Bleeding, so localized, may be the first clue to further study, in a patient who appears to have a normal chest film. Alarming hemorrhage may be the first symptom in a patient who has had benign appearing cystic disease by x-ray for years. I have recently resected a lower lobe in a patient who entered the hospital in shock from hemorrhage, at the age of 65, and who had had noted cysts within his right lower lobe for twenty years, with absolutely no antecedent symptoms.

The infected cyst may on occasions rupture into the pleural cavity, with resultant empyema or tension pneumothorax. A large cyst that has filled with purulent exudate is often indistinguishable from an empyema, and may give the identical symptoms.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis depends to a great extent on the x-ray appearances. If a cyst contains air, is solitary and large, it must be differentiated from pneumothorax, large emphysematous bullae, and from diaphragmatic hernia.

The smaller solitary cyst may resemble a thin walled tuberculous cavity. If the cyst contains fluid, or fluid and air, it may be mistaken for empyema, lung abscess, hydatid cyst, or solid tumor.

The multiple fluid filled cysts are commonly mistaken for saccular bronchiectasis, and the following table is helpful in their general differentiation. (Table 1)

The following diagnostic measures have been the most helpful to the thoracic surgeon:

A. Painstaking x-ray study:

Oblique views, lordotics, and stereoscopic technique will often disclose a rounded density or rarefaction when the standard PA view is read to be normal. Laminography is most helpful in delineating smaller irregular shadows, and will often reveal an air-fluid level where not suspected. Bronchography is a valuable adjunct, particularly in mapping the extent of cystic disease where there is bronchial communication. If the cyst is non-communicating, it will often show adjacent crowding of bronchi, and thereby outline the extent of the pathologic process.

B. Bronchoscopy:

Bronchoscopy is both a valuable diagnostic and therapeutic tool. Where there is bleeding or purulent expectoration, endoscopic examination will often localize the segment or lobe involved before the cysts have been discovered by x-ray. At the same time, it is helpful in ruling out other endobronchial pathology, particularly carcinoma. Prior to surgery or bronchographic examination, it is used to institute adequate bronchial lavage, and is particularly helpful in managing the patient who because of extent of disease or other reasons must be denied surgery.

C. Pulmonary function studies:

Lung volume studies are helpful in the instances of large inflated cysts, when one wishes to know if there is a bronchial communication.

TREATMENT

The ideal treatment of congenital cysts, whether they be the ballooning air cysts of infancy or the infected, bleeding cavities of later life, is excision with careful closure of the bronchial defect. In the larger mediastinal forms, it is occasionally possible to remove the cyst without sacrifice of lung tissue. Localized single or grouped cysts may be removed by segmental resection or lobectomy. Pneumonectomy for diffuse, unilateral involvement is occasionally necessary.

TABLE 1

	CYSTIC BRONCHIECTASIS	CONGENITAL CYSTIC DISEASE
Size:	Usually small. 2 - 4 cms. in diameter	Usually 4 - 5 cms. and much larger
Location:	Usually basilar lobes	Anywhere. Even paratracheal or mediastinal
State of Comm. Bronchus	Always show dilatation and thickening	Usually normal
Ass'd Parenchyma	Ass'd pneumonitis with or without atelectasis	Usually normal
Microscopic	Irregular roughened lining. Squamous metaplasia. Lining epithelium may be lost.	Stratified columnar. Ciliated, mucus producing

In all instances, the preservation of the maximal amount of functioning lung tissue must be the surgeon's aim. Bilateral disease need not necessarily deny the patient surgical treatment, but there are some instances in which the disease is so diffuse as to preclude consideration of excision.

The nonoperable cases are treated in the same manner as cases of diffuse, bilateral, saccular bronchiectasis. Though the results are palliative at best, these patients can be improved and their lives prolonged by judicious use of postural drainage, systemic and aerosol antibiotics, and the newer bronchial dilators and wetting agents. Bronchoscopy and lavage can offer striking relief to this palliative group.

CASE REPORTS

Case No. 1.— (See Figures 1 and 2) Patient is a 32 year old, married male, whose illness dated back to 1951, when he first began to complain of hemoptysis. X-ray at that time disclosed 2 cysts of the left lower lobe, one of which contained a fluid level. Bronchography failed to fill these cysts, and did not disclose other areas of cystic disease. No specific treatment was advised at the time. The patient continued to suffer intermittent progressive hemoptysis, malaise, left chest pain. Serial x-rays showed progressive enlargement of the cysts. The remaining examination was otherwise negative. During August 1953, patient suddenly became febrile, his cough increased, and he began to raise up to 3 oz. daily of bloody sputum. An x-ray now showed a round dense shadow at the left base, interpreted to be a filled cyst. He was given a course of antibiotics, postural drainage, and was bronchoscoped, the latter revealing blood clots coming from basilar orifices of the left lower lobe. At operation, in September 1953, he was found to have a dense, firm left lower lobe, with considerable pleural thickening. The lobe contained two large cysts, one of which was filled with old, changed blood clots. The upper lobe was normal. The cysts showed characteristic columnar, ciliated, epithelium in its lining, with secondary infection and associated pneumonitis. The patient made an uneventful recovery following lobectomy, and to date has been free of pulmonary symptoms.

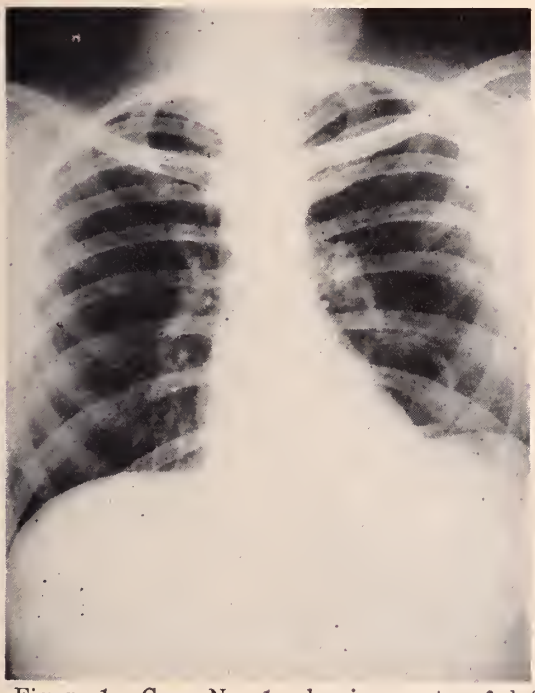


Figure 1.—Case No. 1, showing cysts of left lower lobe during relative asymptomatic stage, one year prior to surgery.



Figure 2.—Case No. 1, showing basal cyst of left lower lobe, filled with blood and purulent secretion.

Comment:

This is a classical case of unilobar congenital cystic disease that ran the entire gamut of complications, with progressive symptoms and disability. Earlier surgery would certainly have spared him two years of discomfort. There were no associated anomalies. Each cyst had a com-

municating bronchus, but repeated infection and thickening had all but occluded the bronchial orifice which explains the finding of the lower cyst tensely packed with undrained blood clot.

Case No. 2.—(See Figures 3 and 4) Patient is a 33 year old, white married female, who was perfectly well until October 1953, when she for the first time coughed up 1 to 2 ozs. of bright red blood. There was no associated febrile illness, cough or pain. An initial chest film was taken, and reported to be normal, though with slight prominence of the left hilum. The patient continued to raise small amounts of blood daily. Sputa studies were negative for acid fast, fungus disease, and neoplasm. During a bleeding episode in January 1954, she was bronchoscoped, and blood was seen to be coming from the superior segment orifice of the left lower lobe; the remaining examination was negative. With this information, oblique and Bucky films were taken of the suspected segment, with disclosure of what appeared to be a 3 cm. cystic lesion in the superior segment of the lower lobe. Hemoptysis continued and became progressive. At operation, on February 15, 1954, the patient was found to have a solitary 3 cm. congenital cyst of the superior segment of the left lower lobe with an aberrant bronchus patently connected to the left main stem. A segmental resection was carried out. The patient made an uneventful recovery, and has been symptom free since.

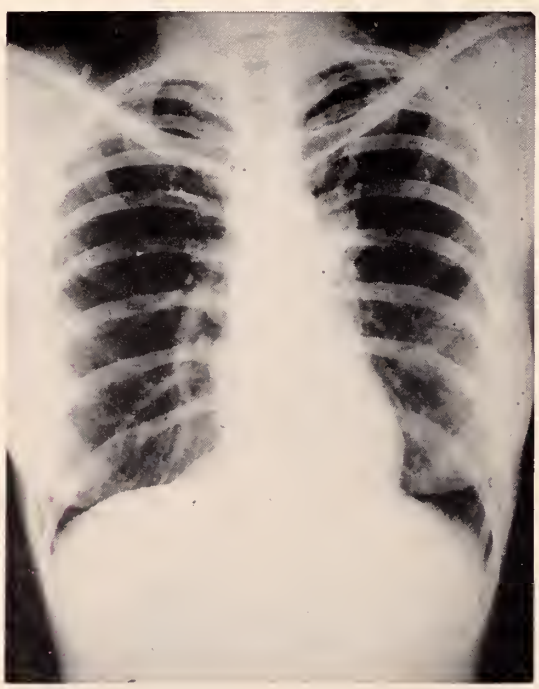


Figure 3.—Case No. 2, showing routine PA film at onset of hemoptysis, with only suggestive prominence of left hilum.

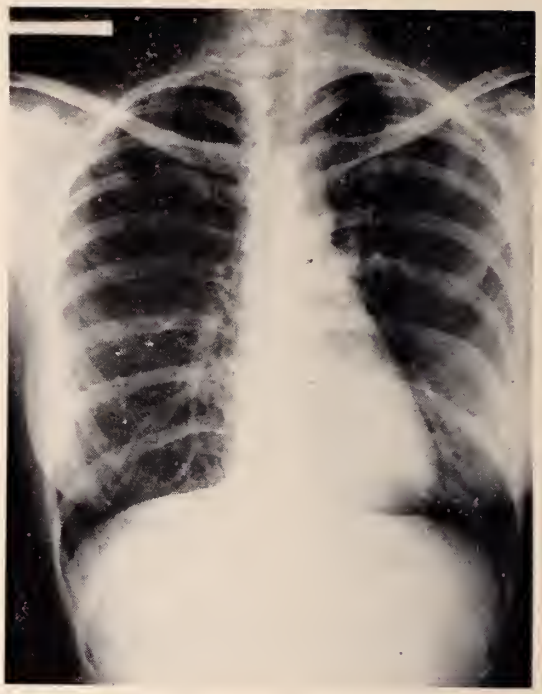


Figure 4.—Case No. 2, showing left hilar area one week after Figure 3, and revealing a 3 cm. cystic lesion in the superior segment of left lower lobe.

Comment:

This interesting case exemplifies the value of diagnostic bronchoscopy. It was by this means that the site of bleeding was localized, and a clue given that radiologically delineated the cyst. On section of the cyst, a myriad of thin-walled, fragile vessels were seen to course through the lining. There was some secondary infection, which presumably precipitated the bleeding.

Case No. 3.—(See Figure 5) Patient is a 48 year old, married white male, who entered the hospital with a six day history of cough, fever and right chest pain. His hospital temperature ranged up to 103 degrees. X-ray disclosed a homogeneous density of the lower half of the right lung field, with deviation of the trachae, to the left. It was felt that he had an underlying pneumonia and empyema. He showed no response to intensive antibiotic therapy. Attempted aspiration of the right plural space was unproductive. At bronchoscopy, after instillation of 1:10,000 aqueous Zephiran, there was sudden expectoration of about 500 ccs. of thick, purulent

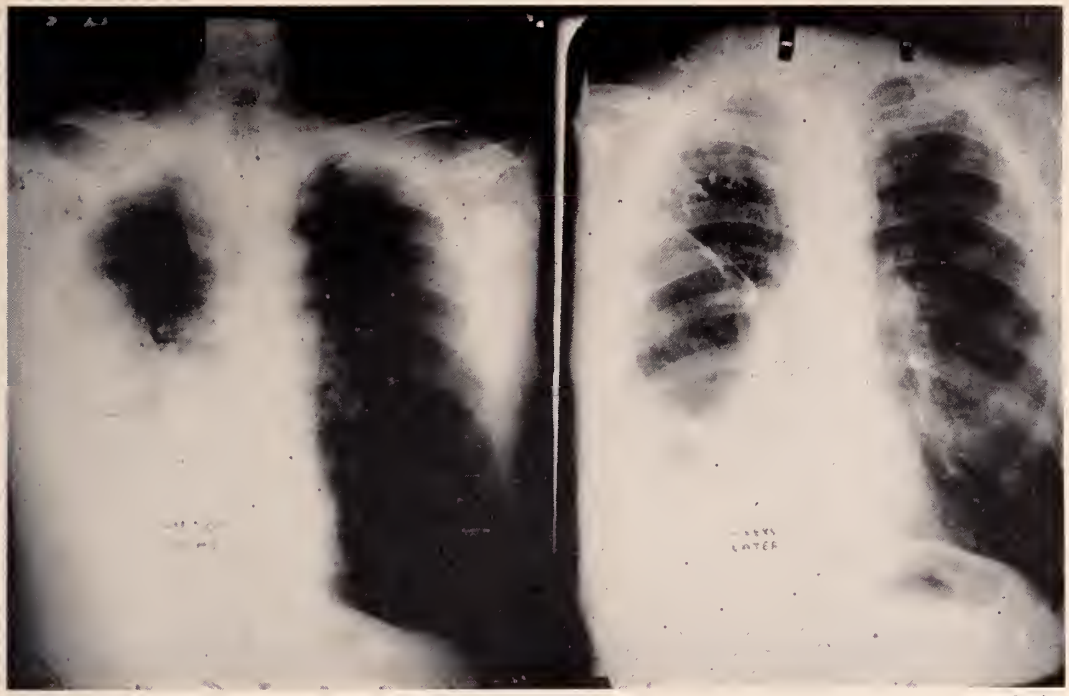


Figure 5.—Case No. 3, showing the large filled cyst of the right middle lobe on admission, and again after bronchoscopy and lavage, when its cystic configuration became apparent.

secretion. A follow-up x-ray now disclosed a large cystic area that had apparently emptied its contents through the communicating bronchus. At surgery, eight days later, he was found to have a large, communicating, thick walled congenital cyst, completely replacing the medial segment of the right middle lobe. The cyst was about the size of a large grape-fruit, and crowded adjacent pulmonary segments. The cystic segment was excised, with complete recovery of the patient.

Comment:

This is a classical example of a large, communicating tension cyst that has become secondarily infected, with all the symptoms of pneumonia and picture of empyema. The value of bronchoscopy in emptying the filled cyst, and clarifying the underlying pathology is demonstrated.

SUMMARY

1. Congenital cystic disease of the lung is a not infrequent cause of pulmonary disability, often masquerading as carcinoma, tuberculosis, bronchiectasis, and unresolved pneumonia.

2. Secondary infection and bleeding are common complications.

3. Painstaking x-ray study and bronchoscopy are valuable diagnostic tools.

4. Surgical excision, when possible, is the ideal treatment.

5. Three representative cases are illustrated.

NOTE:

Case No. 3 is from the Thoracic Surgical Service of Boston City Hospital, Boston, Mass. (Dr. John W. Strieder, Chief of Service)

Cases Nos. 1 and 2 are from the surgical service of Our Lady of the Lake Sanatarium, Baton Rouge, La. (Drs. E. Lobrano and R. Coe, referring physicians).

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INFECTIOUS HEPATITIS IN CHILDREN *

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Infectious hepatitis in infants and young children, in contrast to the disease in adults, is not usually characterized by jaundice. Recognition of this fact has been relatively recent, and as a consequence, we are just learning about the incidence and duration of the disease, its spread, and the frequency of permanent liver damage following this infection in the pediatric age group. In older children the clinical picture and its severity becomes progressively more like that seen in adults. Expressed in another way, the severity of the disease is as a rule directly proportional to the age, ranging from mildly ill, nonjaundiced cases in infants to severely ill, jaundiced cases in older children. There are, of course, important exceptions to this general trend. Notable in the experience of one of us (C.G.) were two fatal icteric cases in young infants born to the same mother. The greatest incidence has been found between the ages of four and fourteen,[1] and has been related to the concentration of individuals in this age group in schools where lack of proper instruction in hygiene or limited sanitary facilities may contribute to the natural carelessness of children in their personal habits. In addition, the fact that many cases in the younger ages are not accompanied by jaundice, and, hence, may not be diagnosed or reported, suggests that the actual incidence in school-age children is considerably greater than recorded figures would seem to indicate.

ETIOLOGY AND MANNER OF SPREAD

These nonicteric cases greatly complicate the problem of controlling outbreaks of infectious hepatitis, whether in school or elsewhere, and probably are the source of a considerable number of secondary cases discovered in family groups. Drake[2] believes, from skin testing surveys, that this possibility is not as important as might be expected. Reports of other investigators have indicated that virus may be passed for long periods of time in the stools of patients who are not jaundiced. In any event, since it has been demonstrated that 35 per cent of adults over thirty years of age have built up an immunity,[3] infectious hepatitis must be considered as a disease to which a high proportion of young persons are exposed, and as a diagnostic possibility which must be borne constantly in mind by any physician who cares for children.

The viral etiology of infectious hepatitis has been established both by feeding experiments in human volunteers,[4] utilizing bacteria-free filtrates, and also by isolation and propagation of the viral agent in the amniotic fluid of embryonated eggs.[5] Cross infection and immunity studies have further established the difference between the viruses causing infectious hepatitis and serum hepatitis.[6] Recently a study in the St. Vincent's Orphanage in Chicago[3,7-11] has furnished very convincing evidence that spread of the disease is accomplished—like typhoid—by the fecal-oral route. After controlling a well established outbreak of infectious hepatitis by conferring passive immunity with gamma globulin, Capps and his co-workers were able to prevent the appearance of further cases among new groups of student nurses entering training. Having established this fact, passive immunity was no longer provided, and for the following eight to ten month period new cases again appeared. Then aseptic technique, emphasizing careful handwashing, was instituted, and no further cases of hepatitis occurred among incoming nurses exposed to infected infants. In this connection it is interesting to note that no respiratory precautions were taken at any time. Stokes contends that at least a few cases would have been expected, even following the institution of aseptic technique, if respiratory spread

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were a significant possibility. However, because infectious hepatitis in children frequently begins with symptoms of upper respiratory infection, the possibility of respiratory spread has not yet been completely eliminated.

As would be expected in any disease spread primarily by the fecal-oral route, outbreaks have been reported which resulted from contaminated food,[12] milk,[13] and water.[14] It is probable, however, that more intimate personal contact explains a majority of cases. Finally, it should not be forgotten that the virus of infectious hepatitis can be recovered from the blood of infected individuals at least for a limited period of time,[3] and that as a result infection can be spread by the parenteral route, just as in the case of serum hepatitis.

DIFFICULTIES IN STUDY AS IN POLIOMYELITIS

In reviewing what is known, one is impressed by the effort and resources, both professional and otherwise, which have been devoted to the study of infectious hepatitis. Yet it is apparent that many important and fundamental questions remain unanswered. There are important reasons for this. First, and most important, there is no animal except man which can be infected with the virus of infectious hepatitis. Although limited experiments have been carried out utilizing human volunteers, this method does not permit extensive studies. Second, there is no diagnostic clinical or serological test or group of tests which can be used to establish a definite diagnosis. Finally, as mentioned previously, the demonstrated occurrence of nonicteric cases makes the task of studying epidemic outbreaks extremely difficult if not impossible. Much of the information we do have is based on a study of illnesses which are presumed to be infectious hepatitis because they have a suitable incubation period, because they present a typical sequence and type of symptomatology, because they are associated with suggestive abnormalities in laboratory tests, and because the occurrence of secondary cases among exposed, susceptible individuals is prevented by the use of gamma globulin.

Although the parallel is not complete, a study of infectious hepatitis presents many of the same difficulties that are encountered in dealing with poliomyelitis. There are undoubtedly many subclinical cases and most adults have acquired immunity without manifesting clinical forms of the disease. The difficulties in reaching more than a presumptive diagnosis are legion in both instances. The incidence of each disease has been increasing in spite of all efforts to combat it. In the case of infectious hepatitis, for example, during the first quarter of 1952, 6,286 cases were reported as compared to 8,216 cases during a similar period of 1953. During the first quarter of the current year there have been 17,120 cases—over twice as many as in the preceding year.[15] Part of this rise is undoubtedly due to more accurate diagnosis and reporting, but there is also probably an absolute increase. To carry the analogy with poliomyelitis further, treatment of both conditions is largely supportive, and, although a vaccine is now being tried in the prevention of poliomyelitis, we cannot describe a proved method for active immunization against either infection. With respect to passive immunity, gamma globulin is of limited, if any, value in poliomyelitis, but is very useful in infectious hepatitis. Finally, the viruses of both infectious hepatitis and poliomyelitis are passed in the stools of affected individuals for varying periods of time.

CLINICAL PICTURE AND DIAGNOSIS

Infectious hepatitis in infants, as in adults, begins after an average incubation period of twenty to thirty days.[6] The first symptoms are fever, irritability, and frequently, rhinitis. These are shortly followed by anorexia, nausea and vomiting, diarrhea, and an enlarged, tender liver, which at times is associated with severe abdominal pain and rigidity. Laboratory studies of liver function become abnormal during the prodromal period and frequently remain so for a considerable time after apparent clinical recovery.[16] Probably the earliest change is an increase in the direct

serum bilirubin reaction. This is observed even in infants who do not become clinically jaundiced and occurs before the total bilirubin becomes elevated in jaundiced cases. Another early change is the development of a positive thymol flocculation test. Since this reaction is also one of the last to revert to normal during recovery it is doubly useful as a clinical tool. Shortly after these tests become positive, the thymol turbidity and the cephalin-cholesterol flocculation also reveal abnormality, and still later, the total serum bilirubin may rise. These tests, along with urinary urobilinogen determination and an oral or intravenous hippuric acid excretion test, are recommended by Hepler[17] for evaluation of initial functional impairment in hepatitis and to follow progress of the disease process. In evaluating prolonged cases he recommends, in addition, the bromsulfalein test, serum albumin determinations, and measurement of prothrombin time in the presence of adequate vitamin K. In this connection, Stokes and Capps found, in studies at the St. Vincent's Orphanage, that in infants infectious hepatitis may follow a course of several months duration as determined by either clinical or laboratory studies. Furthermore, even after these infants appear well, and studies of liver function have returned to normal, they may continue to excrete the virus in their stools for many months. One infant in the St. Vincent's Orphanage study passed stools containing virus for at least fifteen months after apparent recovery. Of real interest, and in contrast to experience with adult cases, most of these infants appear to recover completely from such a prolonged illness without permanent damage to the liver.

The clinical picture in older children is essentially the same as that found in adults. Initially, there is a mild prodromal illness with fever lasting two to four days which is followed by an afebrile interval and apparent improvement for three to eight days. Jaundice then makes its appearance and is accompanied by an enlarging, tender liver. Typically, icterus becomes more intense for a period of three to seven days, at which time a crisis occurs with a subsequent rapid fall in serum bilirubin, re-appearance of bile in the stool, and prompt subsidence of nausea and liver pain. In the few cases which end fatally, the serum bilirubin continues to rise, nausea and vomiting persist, and twitching and somnolence rapidly progress to convulsions and coma. Death occurs soon thereafter, often within ten days of the onset of symptoms. Except in these fulminant cases, jaundice gradually fades during the one to three weeks following crisis. In this convalescent stage, the patient may appear clinically well but continues to have abnormal liver function studies for at least two to three more weeks.

MANAGEMENT

Although the fatality rate of infectious hepatitis is less than 1 per cent,[3] the prolonged period of morbidity makes it a disease to be universally respected. The proper management of it must accomplish two objectives: First, it must provide proper care for the individual; and, second, it must protect against spread of infection to susceptible contacts. The latter task is made particularly difficult by undiagnosed early or nonicteric cases as well as by unrecognized chronic cases which continue to excrete virus over long periods. Unfortunately, there is no biological, antibiotic or chemotherapeutic agent which affects the disease process directly. As a consequence, supportive therapy in general and complete bed rest in particular are of great importance. Not only does any exertion increase nausea and aggravate abdominal pain, but also activity will probably lead to a prolongation of the active phase of the disease and an increased incidence of permanent liver damage. In a study of 400 Navajo Indian children, Payne[19] kept 200 of them with active hepatitis at bed rest for several months. The other 200 children, who were thought to have had hepatitis but showed no evidence of activity on physical examination, were allowed to be active. At the end of the nine months, the percentage of enlarged livers, spider angiomata, and

abnormal liver function studies in the second group of children was greater than in the first. Some authors[20] recommend ambulation when appetite has returned and the bilirubin is normal, without waiting for the cephalin and thymol flocculation reactions to become negative. In contrast, Drake[2] urges that children be kept away from school until all liver function studies are normal, and believes that even then they should be observed carefully for fatigue, anorexia, or bilirubin in the urine.

Diet deserves major consideration as a supportive measure in the treatment of hepatitis, but in this instance palatability, rather than rigid control of specific types of food, must be the primary focus. For example, since fat tends to increase nausea and abdominal pain, it is logical to limit the amount ingested, but attempts to devise a fat-free diet yield such unappetizing results that they are justifiably abandoned in favor of a tempting well balanced diet. A liberal allowance of protein should be provided and usually is well accepted. The diet should supply an adequate amount of all vitamins, but unless food intake is seriously limited by anorexia or nausea, additional vitamins are unnecessary. Capps[21] has even suggested that an excessive vitamin intake may be harmful. Similarly, supplemental therapy with methionine and choline is unnecessary except in poorly nourished individuals or in those patients who for appreciable periods are unable to eat an adequate diet.[21] Antibiotics, of course, have no direct effect on the virus of infectious hepatitis itself, and do not significantly alter the course of the disease. Both Drake[2] and Capps,[21] however, recommend a brief course of aureomycin in severely ill children on the hypothesis that perhaps by cutting down the number of intestinal bacteria, the liver is relieved of part of its burden in detoxifying the products of bacterial metabolism. As in the case of any liver disease, the response of patients to barbiturates is both exaggerated and prolonged. Nevertheless, the cautious administration of small doses of phenobarbital is indicated for control of marked restlessness.

The results of treatment with adrenocorticotropic hormone (ACTH) and adrenal cortical extract (ACE) have been spotty, conflicting, and in general, disappointing. Webster[22] reported good results when ACE was used in the treatment of several forms of severe liver disease, including infectious hepatitis, but was not able to discern any remarkable beneficial effect of ACTH.[23] In addition, a high incidence of side effects was associated with its use. Both Colbert[24] and Klatekin[19] reported general clinical improvement, with a decrease in anorexia and pruritis as well as a fall in serum bilirubin with the use of ACTH, but they also pointed out the necessity for continuing therapy until recovery is almost complete in order to prevent relapse when therapy is discontinued. While some authors[21] feel that neither ACTH nor cortisone is indicated, under any circumstances, at least it can be stated that they should not be used except in severely ill or comatose children.

Probably the most important phase of the management of infectious hepatitis, whether in a community or family, is the prevention of secondary cases. In view of the nature of the disease, this is not easily accomplished. The long incubation period of twenty to thirty days makes it impractical to isolate contacts, and tends to dissipate the attitude of watchful waiting engendered by known exposure. The virus has been demonstrated in the stools of patients by the time of the first vague prodromal symptoms,[11] and quite possibly it is present even before this. As a result, an obvious reservoir of virus exists in the excreta of recognized cases and in the stools of infants with nonicteric, often undiagnosed disease. This latter group of patients is epidemiologically quite important and can be considered as at least temporary carriers. They offer a probable explanation for the discrepancy between the frequency of naturally acquired immunity in the general population as judged by skin testing and a medical history of

jaundice.[18] Unfortunately, there is no method by which this "carrier state" can be either terminated or prevented. There are, however, means at our disposal of preventing the spread of infectious hepatitis. In the first place, temporary protection conferred by gamma globulin has been conclusively demonstrated [25, 26] and finds its greatest usefulness in preventing secondary cases in family groups and closed institutions.[1] Effective levels of passive immunity are obtained with doses of gamma globulin as small as 0.01 cc. per pound of body weight if given at least seven days before the expected onset of jaundice. Protection can be expected to persist for as long as six weeks. Isolation of active cases, proper facilities and instruction in sanitation, and aseptic techniques have their obvious applications, especially in institutions with stable populations.

A recent, unexpected observation has suggested the possibility that a vaccine may be developed which will offer active immunity against infectious hepatitis. When an epidemic of infectious hepatitis occurred in a children's house of correction in which a portion of the population had been previously skin tested [28] using irradiated amniotic fluid from embryonated eggs infected with the hepatitis virus, Drake [18] found that there were 5 cases of hepatitis among 320 tested children, or a rate of 1.6 per cent as contrasted to 112 cases among the 825 children who had not been tested—a rate of 13.6 per cent. This suggests that a considerable number of the skin tested group had acquired immunity.

In considering the marked rise in the number of cases of hepatitis with jaundice in the older age groups, and the high incidence of this disease in children from five to fourteen years of age, it is interesting to speculate further as to the similarity between poliomyelitis and infectious hepatitis. Is this increased incidence related to the relatively high standards of cleanliness and hygiene which prevail today, and which in turn tend to prevent the acquisition of active immunity in infancy through repeated subclinical infections? Solid active immunity to infectious hepatitis is certainly important since it has been variously estimated that up to 10 per cent of the general population harbor the virus and thus serve as possible sources for exposure of susceptibles.

SUMMARY

Infectious hepatitis is a disease of prime importance to any physician caring for children. Its greatest incidence is in individuals between the ages of five and fourteen years, but of even greater importance, it frequently assumes a nonicteric form in infants and young children, the vague symptomatology of which is particularly difficult to recognize. Even though the clinical course in these young people is often prolonged, they seldom suffer permanent liver damage. The fact that they excrete virus in their stools over a period of many months constitutes a difficult problem in preventive medicine which has not yet been solved. The management of infectious hepatitis in children, as in adults, is almost entirely symptomatic. Prevention of the disease is possible by means of careful attention to personal hygiene and by the use of gamma globulin.

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TREATMENT OF OSTEOARTHRITIS OF THE HIP JOINT*

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Osteoarthritis, commonly known as degenerative arthritis involving the hip joints, or malum coxae senilis, comprises a gradually increasing percentage of the practice of the orthopedic surgeon. Undoubtedly, this increase can be explained largely on the basis of the increase in life expectancy and the admirable attempts of the medical profession as a whole to make elderly patients more useful and comfortable (Figure 1).

ETIOLOGY

In standing and in walking, at every step the entire weight of the body is carried through the hip joints. Imperfect development, previous disease, injury, and the normal degenerative effects of age all contribute to impairment of function of this important joint. Among the underlying etiologic factors, many of which occur in childhood or adolescence and lead to degenerative changes in adult life, may be mentioned those due to imperfect development of the hip, such as congenital coxa vara or congenital dislocation or subluxation of the hip with associated dysplasia of the acetabulum, and those due to adolescent epiphyseal disturbances, such as coxa plana or slipping of the upper femoral epiphysis. Other predisposing causes include pyogenic infection of the joint or complications of infectious diseases such as scarlet fever. Still other degenerative changes develop after direct trauma to the joint (Figure 2), such as aseptic necrosis of the head of the femur following fractures of the head or intracapsular fractures of the neck of the femur, traumatic dislocations or fracture dislocations involving portions of the acetabulum. The latter are becoming more frequent as the speed and power of our motor vehicles increase. Lastly, the daily wear and tear, and the normal result of aging in major weight bearing joints, universally present after the age of 40 years, are important etiologic factors.

PATHOLOGY

The clinical manifestations of this disease closely parallel the pathologic changes that develop as the disease progresses (Figure 3). In the early stage, the femoral head shows some subchondral cysts and some marginal sclerosis with diminution of the articular space. Later, there develop marginal exostoses as a result of

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Figure 1. Severe osteoarthritis following fracture dislocation of hip in 37 year old male. (A) Immediately following injury. (B) 17 years later.



Figure 2. Fracture dislocation of head of femur. Immediate treatment with replacement prosthesis in attempt to prevent changes such as those demonstrated in Figure 1.



Figure 3. Autopsy specimen following fracture of base of femoral neck in 80 year old patient. Shows typical pathologic changes of osteoarthritis: (1) Degeneration of cartilage of head; (2) Lipping of cartilaginous margins; (3) erosion and thinning of weight bearing cartilage of acetabulum; (4) areas commonly known as subchondral cysts are areas of bone necrosis with replacement by edematous fibrous tissue.

proliferation of new bone about the femoral head and margin of the acetabulum. The cartilage becomes irregular and worn away over the head and sclerosis of the head as well as the adjacent acetabulum becomes evident. Finally, there are evidences of severe deformity. There may be some outward and actual subluxation of the head with a mushroom appearance over the neck of the bone.

CLINICAL MANIFESTATIONS

In the early stages the principal complaint is pain on weight bearing with increased stiffness of the hip. Pain is felt chiefly on motion and is relieved by rest. It may extend down the thigh to the knee. Gradually, muscle spasm develops and the hip assumes a characteristic position, primarily fixation in outward rotation, flexion and adduction. Movement of the hip joint is restricted, particularly in internal rotation, and pain and limping become progressively worse. As flexion and adduction increase, the patient assumes a peculiar gait not unlike a gluteus medius limp because he must swing the body to the opposite side in order to clear the adducted hip from the floor in walking. At this stage it may be necessary for the patient to use a cane or a crutch in order to relieve the pain of weight bearing sufficiently to remain ambulatory. (Figure 4)

TREATMENT

Preventive Measures. — Ghormley[1] recently listed three factors which he believed might be effective in reducing the incidence of degenerative disease of the hip. The first is eradication of acute infection of the hip in infancy and childhood as a result of the availability of chemotherapeutic and antibiotic agents. The second is better care of patients with congenital dislocation or dysplasia of the hip because of earlier recognition and more satisfactory treatment. The third factor is earlier recognition and more effective treatment of slipping of the femoral capital epiphysis and Legg Perthe's disease. In addition, better initial care of traumatic dislocations and acute fractures of the head of the femur and acetabulum would certainly help prevent disabling degenerative changes in later life resulting in traumatic arthritis (Figure 6).

Conservative Measures. — Osteoarthritis of the hip causes pain, instability and deformity or limitation of motion. Of these, pain is the most important consideration in determining whether conservative or operative treatment is indicated in the individual case. A young person with an unstable painful hip is more seriously handicapped than an elderly person, since he is forced to pursue a sedentary occupation. Older individuals can often be relatively happy and self sufficient if they can be relieved of pain by conservative means, even being willing to use a crutch or cane. Many of them will adjust to the deformity or limitation of motion or instability if only they can be



Figure 4. (A) Degenerative arthritis in 54 year old male following septic arthritis at age 21. (B) End result, four years postoperatively; (C) Twelve years after arthrodesis patient has no pain, works on feet 8 to 10 hours daily; required cane previous to operation.



Figure 5. Osteoarthritis following slipped upper femoral epiphysis. End result seven years after arthrodesis at age of 56. Works daily in hat shop.



Figure 6. Vitallium cup arthroplasty following partial fibrous ankylosis of hip. Result of septic arthritis as a child. One year after operation 75% of hip motion.

rid of the pain. The ability of the orthopedic surgeon to judge the amount of subjective pain, and the ability of the patient to adjust to his disability are probably the greatest factors in determining whether conservative or operative measures are required.

Much can be accomplished in the early stages by limitation of activity, weight reduction, frequent rest periods, use of recumbency with traction to overcome early deformities, use of crutches or complete bed rest during an acute exacerbation, and generous use of aspirin. Physical therapeutic measures, such as heat, massage and exercises, are of secondary importance. Occasionally, use of a lumbosacral corset will be of material aid in improving posture and holding the head of the femur snugly against an uninvolved portion of the acetabulum.

Injection of procaine into the obturator nerve and the posterior sensory supply to the capsule from the small branches of the sciatic nerve, advocated principally by Steindler,[2] has, in our experience as well as that of many others, resulted in only transient relief of pain.

Since the advent of hydrocortone reports of its efficiency in relieving symptoms in osteoarthritic hips have varied considerably. Hollander[3] reported failures in 53 per cent of 77 hips treated in this way. He attributed these failures principally to difficulty in penetrating the hip joint capsule and also the fact that seldom can fluid be aspirated to assure the operator that the needle is within the joint. He used an anterior approach just lateral to the femoral artery. The usual dose is 1.5 cc. or 37.5 mg. On the other hand, Reynolds and Ramsey[4] reported satisfactory results in 14 of 18 patients who had received 28 injections of hydrocortone into the hip for degenerative arthritis. A result is considered satisfactory if at least 50 per cent of the pain is relieved for a period of three weeks.

Roentgen ray therapy, although popular for short periods of time, has been discarded by most competent radiologists.

Operative Measures. — Increasing severity of the disease and intolerable pain are the principal indications for operative treatment. Denervation of the hip joint, popularized by Obletz and associates,[5] has proved unreliable in our experience. This leaves only three other surgical possibilities: (1) arthrodesis, (2) osteotomy, and (3) arthroplasty.

Of all procedures for the control of pain arthrodesis is undoubtedly the most reliable. It is ideal for a young active man with unilateral disease who works outdoors. It is the surest method of eliminating pain as well as restoring suitable position of the joint. However, it has the disadvantage of placing some additional stress upon the lumbosacral joint, and for this reason many surgeons consider extensive arthritic changes in the lumbar spine a contraindication to its performance. In addition, prolonged postoperative immobilization is required in order to ensure fusion of the denuded articular surfaces. However, once fusion is obtained, the patient is assured a permanent, painless extremity in good position on which he can bear almost unrestricted weight, unless there is considerable shortening but this produces little noticeable limp. We have considered this the procedure of choice for unilateral involvement at any age.

We have treated 17 consecutive osteoarthritic hips by arthrodesis. Seven patients were under the age of 50 years, 5 in the sixth decade and 5 in the seventh decade of life. All patients have been followed from four to ten years. Postoperative infection prevented fusion in one patient and one patient died after three years. The other 15, who all required crutches preoperatively are not only able to walk without crutches, but are able to resume their former occupation or an equivalent one. Only 2 complain of mild low back pain after considerable activity, and only 2 have appreciable limitation of motion of the knee due to immobilization.

Most of the several standard operative technics for securing arthrodesis of the adult hip include removal of the articular cartilage from the head and acetabulum,

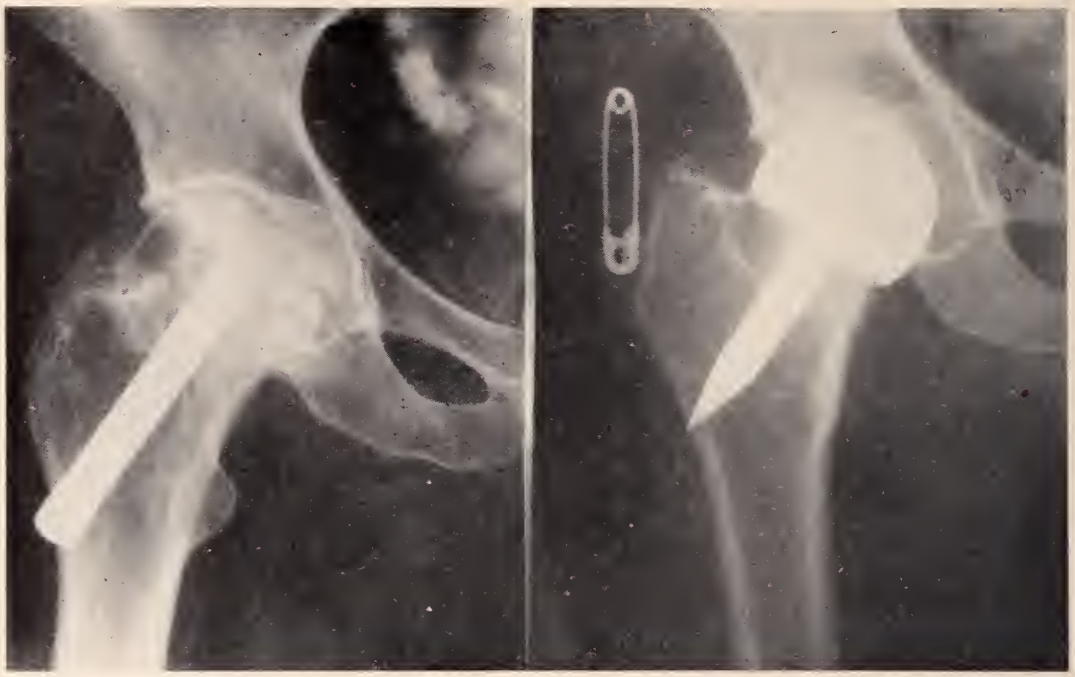


Figure 7. Replacement prosthesis "stem" type performed for aseptic necrosis of femoral head three years after internal fixation for fracture of femoral neck.

fixation with some type of metal, usually a Smith-Petersen nail driven through the neck and head into the thick portion of the acetabulum with additional fixation screws at right angles to the nail, and use of additional bone, usually from the ilium, to supplement fusion. The accepted position is approximately 30 degrees of flexion, not more than 5 degrees of abduction and slight external rotation. Usually, at least four to six months are required to obtain radiologic evidence of fusion.

The second method, *osteotomy,* moves the weight bearing line of the femoral shaft toward the midline of the body and corrects faulty position due to adduction flexion contracture with its secondary strain on the lumbar spine. Steindler[2] considered suitable candidates for osteo-



Figure 8. Replacement prosthesis "intramedullary" type performed for nonunion of femoral neck fracture.

tomy those who have no nocturnal pain and have at least some range of adduction and flexion without pain, because, after osteotomy, the flexed hip is extended, the adducted hip is abducted and the range of motion in these directions must be painless if the result is to be satisfactory. This operation not only corrects the deformity but brings a different or uninvolved portion of the femoral head in contact with the acetabulum to carry the body weight. This method has been employed extensively in England, particularly by McFarland.[6] It has not enjoyed wide popularity in this country because its advantages over arthroplasty or arthrodesis have not seemed convincing.

Arthroplasty (Figure 9) has the advantage of preserving or increasing motion but patients must be carefully selected. It is definitely indicated in patients with bilateral disease, especially if motion has been obliterated, since it is most desirable to secure motion in at least one hip. For a successful result it is necessary to have sufficient strength and muscles about the joint to move the hip under weight bearing conditions postoperatively. Moreover, the patient must be willing to cooperate in a long program of exercise to restore atrophic muscles to their normal capacity and particularly overweight individuals must be willing to demonstrate a genuine desire to improve their condition by losing weight before the operation is attempted.

In general arthroplasties have several disadvantages. Some instability results, not all pain is eliminated in many cases and the extremity frequently cannot withstand constant weight bearing so that the patient is forced to sedentary employment.

Two methods of arthroplasty are in general use. One, the vitallium cup or mold arthroplasty, was popularized by Smith-Petersen.[7] The other method is prosthetic replacement, either of the stem type originated by Judet[8] in which the head only is replaced, or of the intramedullary type which replaces the head and all or part of the neck with fixation in the femoral shaft.

The vitallium cup arthroplasty has been in use since 1936. It requires a high degree of technical skill on the part of the operator to reshape the head and acetabulum. In the hands of Smith-Petersen and his co-workers, Badgley, Ghormley and others, a high percentage of good results has been obtained.

The replacement type of arthroplasty, which has been in use only the past four years, has not yet been perfected. Many complications have been reported. The acrylic and nylon materials have been largely supplemented by metallic materials, either vitallium or stainless steel, and



Figure 9. Arthrodesis and arthroplasty performed for relief of severe bilateral osteoarthritis in patient 56 years of age.

the mechanical effect of the prosthesis upon weight bearing and stress reaction of the supporting neck and shaft of the femur has not been satisfactorily determined, because of the short period of time that the method has been employed. Another outstanding disadvantage is that after sacrifice of the head or head and neck, if the method is unsuccessful because of infection or other complications and the prosthesis is removed, it is extremely difficult to reconstruct or arthrodese the hip as a secondary procedure because of the loss of bony substance.

SUMMARY

Treatment of osteoarthritis of the hip is conservative or operative depending upon the amount of pain and progressive disability which the patient experiences. The surgeon's ability to evaluate the patient's complaints as well as to estimate the patient's ability to carry on with certain restrictions in activity is of paramount importance in abandoning conservative treatment for operative treatment. There are three operative procedures for correction of osteoarthritis of the hip: arthrodesis, subtrochanteric osteotomy or arthroplasty. Again, the surgeon's ability to select the correct procedure for the particular patient, based on his knowledge of the requirements of the patient and his own personal experience with these methods, is the key to successful results.

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SOME PRACTICAL ASPECTS ON THE DIETARY TREATMENT OF DIABETES MELLITUS

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An adequate diet is a part of the treatment of every patient with diabetes mellitus. The conventional methods used in the past to attain this have been complicated; the foods have been of limited variety and have required painstaking weighing. In many respects the philosophy of dietary instruction has overemphasized the importance of food restriction. This negative approach has resulted in an emotional maladjustment in certain patients. The purpose of this paper is to discuss present day trends to promote emotional well-being and sociological adjustment of the individual, while supplying him with a balanced diet.

Calculation of a diet formula based on the standard weight of the patient is the first step in providing adequate nutrition. The total caloric intake should vary from 25 to 50 calories per kilograms of body weight depending upon age and occupation. An adult patient doing office work or housework requires about 30 calories per kilogram of body weight. The twenty-four hour total caloric formula can thus be calculated. Obese patients should be put on reduction diets varying from 1200 to 1500 calories (or 1000 calories in extreme cases) and so regulated that they lose 1 to 2 pounds per week.

After the diet formula is computed the patient is given instructions which will make it possible for him to translate these calories into the proper type of food. A relatively new diet has been formulated jointly by the American Dietetic Association, American Diabetic Association, and Diabetes Section of the United States Public Health Service.[1] One of the chief advantages of this "ADA Diet" is its simplicity.[2] It is not the purpose here to review this new food plan in detail, but

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a few of the important refinements will be discussed.

Table 1 shows the caloric formula for

TABLE 1
CALORIC LEVELS OF SAMPLE MEAL PLANS

MEAL PLAN	CARBOHYDRATE	PROTEIN	FAT	ENERGY
	gm.	*gm.*	*gm.*	*calories*
1	125	60	50	1200
2	150	70	70	1500
3	180	80	80	1800
4	220	90	100	2200
5 *	180	80	80	1800
6 *	250	100	130	2600

* Planned particularly for children.

the 6 meal plans. They provide variation in intake and distribution of protein, fat, and carbohydrate, calories which will fit most patients. Plans 5 and 6 provide a quart rather than a pint of milk and are designed primarily for children.

The last step in translating these calories to actual foodstuffs is done by the use of so-called food exchanges. Each of six food exchanges represents a measured amount of milk, meat, fruit, vegetable, bread or fat (Table 2). A booklet given to the patient lists the various foods, grouped according to their composition into these six exchanges.

The vegetable exchange list (Table 3) shows several revolutionary changes from the older diets. All vegetables containing 6 per cent or less carbohydrates are grouped under A. These can be used in unlimited quantities raw or as much as 1 cup when cooked. This furnishes a useful source of bulk food to satisfy the appetites of young boys or of patients on reduction diets. Such a method obviates the confusion and time previously spent weighing and adding 1, 3 and 6 per cent vegetables which formerly were listed separately. Vegetable exchange B indicates vegetables which contain more sugar and should be used in measured amounts.

The bread exchange includes foods containing 15 grams of carbohydrate, such as vegetables of high sugar content. In marked contrast to older diabetic diets is the presence of pure starch foods such as potatoes, rice, and spaghetti. For the children, as well as some adults, cake and ice cream may be used. (Table 4)

The "ADA Diet" thus provides every variety of food which the nondiabetic patient normally eats, except sugar. Substitutes for this form of carbohydrate, such as sucryl and crystallose, are real improvements over saccharin with its bitter after taste. Diabetic candy and soft drinks, such as ginger ale, orange and root beer made with a sugar substitute, are also now on the market. These are useful especially in children to help eliminate the feeling of being "different". It must be emphasized that these are substitute items. The patient should not only adhere to his designated diet but know it so well that he can eat in public gatherings in complete ease.

The treatment of patients with diabetes mellitus who cannot tolerate a solid diet deserves some attention. Such occasions arise during illness and before and after operations and necessitate the use of a liquid diet or parenteral fluid administration. For short term illnesses, the protein and fat content of the diet can be eliminated. The food given in twenty-four hours should adhere to the total amount of carbohydrate which the patient received prior to the illness. A liquid diet can be simply compiled using liquid exchanges from the ADA Diet. As an example, an eggnog with 2 teaspoonfuls sugar, one cup of orange juice and a slice of toast with butter provides about 60 gms. of carbohydrates and 500 calories. A comparable meal three times a day can adequately supply a patient with this regular intake of carbohydrates and calories.

Parenteral fluids should be administered by using glucose. A 5 per cent solution supplies 50 grams of carbohydrate per liter and a 10 per cent solution supplies 100 grams. An amount commensurate with the regular intake of carbohydrate can be given. In long term illnesses

TABLE 2

ADA MEAL PLAN No. 5

For.....

Use Only As Your Doctor Prescribes

Carbohydrate 180 grams, Protein 30 grams, Fat 30 grams Calories 1800

This meal plan has been prepared to use with the Meal Planning Booklet.

YOUR FOOD FOR THE DAY

Amount	Kind of Food	Choose From
1 quart	Milk	List 1
Any Amount	Vegetable Exchanges A	List 2A
1	Vegetable Exchanges B	List 2B
3	Fruit Exchanges	List 3
6	Bread Exchanges	List 4
5	Meat Exchanges	List 5
3	Fat Exchanges	List 6

Divide this food at follows:

YOUR MEAL PLAN

Breakfast:
- 1 Fruit Exchange from List 3
- 1 Meat Exchange from List 5
- 1 Bread Exchange from List 4
- 1 Fat Exchange from List 6
- 1 cup Milk from List 1

Lunch or Supper:
- 1 Meat Exchange from List 5
- 2 Bread Exchanges from List 4
- Vegetable from List 2A (any amount)
- 1 Fruit Exchange from List 3
- 1 Fat Exchang from List 6
- 1 cup Milk from List 1

Dinner or Main Meal:
- 3 Meat Exchanges from List 5
- 2 Bread Exchanges from List 4
- Vegetable from List 2A (any amount)
- 1 Vegetable Exchange from List 2B
- 1 Fruit Exchange from List 3
- 1 Fat Exchange from List 6
- 1 cup Milk from List 1

Bedtime Meal:
- 1 cup Milk from List 1
- 1 Bread Exchange from List 4

SAMPLE MENUS

These Menus Show Some Of The Ways Exchange Lists Can be Used To Vary The Meal Plan The Exchange Lists And Recipes May Be Found In The Meal Planning Booklet

Breakfast:
- Orange Juice—½ cup
- Egg—1
- Toast—1 slice
- Butter—1 teaspoon
- Milk—1 cup (8 ounces)

Lunch or Supper:
- Cheese Sandwich
  (Cheese—1 ounce, Bread—2 slices, Butter—1 teaspoon)
- Lettuce and Tomato Salad
  Zero Salad Dressing (recipe page 17)
- Apple—1 small
- Milk—1 cup (8 ounces)

Dinner:
- Hamburg Patties—3 ounces
- Mashed Potato—½ cup
- Carrots—½ cup Spinach
- Bread—1 slice
- Butter—1 teaspoon
- Banana—½ small
- Milk—1 cup (8 ounces)

Bedtime:
- Milk—1 cup (8 ounces)
- Graham Crackers—2

Breakfast:
- Prunes—2 medium
- Cereal, cooked—½ cup
- Boiled Egg—1
- Butter—1 teaspoon
- Milk—1 cup (8 ounces)

Lunch or Supper:
- Bologna—1 slice
- Radishes, Celery
- Potato Salad (A)—½ cup (recipe page 18)
- Bread—1 slice Butter—1 teaspoon
- Grapefruit—½
- Milk—1 cup (8 ounces)

Dinner:
- Tomato Juice—small glass
- Roast Lamb—3 ounces
- Steamed Rice—½ cup
- Green Peas—½ cup
- Mixed Green Salad
  Zero Salad Dressing (recipe page 18)
- Bread—1 slice Butter—1 teaspoon
- Pineapple Gelatin (recipe page 15)
- Milk—1 cup (8 ounces)

Bedtime:
- Milk—1 cup (8 ounces)
- Soda Crackers—3

TABLE 3
VEGETABLE EXCHANGES

VEGETABLE EXCHANGES A Contain little Carbohydrate, Protein, or Calories		VEGETABLE EXCHANGES B Contain 7 grams Carbohydrate, 2 grams Protein and 35 Calories	
Asparagus	Lettuce	Beets	
Broccoli	Mushrooms	Carrots	
Brussels Sprouts	Okra	Onions	
Cabbage	Pepper	Peas, Green	1 exchange — ½ cup
Cauliflower	Radishes	Pumpkin	
Celery	Sauerkraut	Rutabagas	
Chicory	Young String Beans	Squash, Winter	
Cucumbers	Summer Squash	Turnip	
Escarole	Tomatoes		
Eggplant	Watercress		
Greens			

TABLE 4
BREAD EXCHANGES—LIST 4

One Bread Exchange contains 15 grams Carbohydrate, 2 grams Protein and 70 Calories.

The list shows the different amounts of food for 1 Bread Exchange.

	Amount to Use		Amount to Use
Bread	1 slice	Flour	2½ Tablespoons
Biscuit, Roll (2" diameter)	1	Vegetables:	
Muffin (2" diameter)	1	Beans & Peas, dried, cooked (lima, navy, split pea cowpeas, etc.)	½ cup
Cornbread (1½" cube)	1	Baked beans, no pork	¼ cup
Cereals, cooked	½ cup	Corn	⅓ cup
Dry, flake & puff types	¼ cup	Pop Corn	1 cup
Rice, Grits, cooked	½ cup	Parsnips	⅔ cup
Spaghetti, Noodles, cooked	½ cup	Potatoes, white	1 small
Macaroni, etc., cooked	½ cup	Potatoes, white, mashed	½ cup
Crackers, graham (2½" sq.)	2	Potatoes, sweet or Yams	¼ cup
Oysters (½ cup)	20	Sponge Cake, plain (1½" cube)	1
Saltines (2" sq.)	5	Ice cream	½ cup
Soda (2½" sq.)	3	(Omit 2 fat exchanges)	
Round, Thin (1½")	6		

where parenteral fluids are desirable amino acids are used to supply the protein. The use of parenteral emulsions, which are high in calories, is now in the investigative stage. To date these preparations have been found to be safe, but an adequate method of preventing rancidity has not been perfected.

SUMMARY

1. Recent trends of the dietary treatment of diabetes mellitus are discussed.

2. Emphasis is placed on methods which simplify the diet and allow greater food variation.

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ROENTGENOLOGIC ASPECTS OF GASTRIC CANCER *

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NEW ORLEANS

The seriousness of cancer of the stomach is reflected in its high incidence among neoplastic diseases and its continued high mortality rate.[1,2] The annual number of deaths from this disease in the United States has reached about 40,000,[3] and in Louisiana the annual death rate is approximately 16 per 100,000 population.[4]

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The imperative necessity for recognition of cancer of the stomach while it is a localized lesion is thus apparent. In most cases this obligation rests with the physician who does the roentgenologic examination. Only by early recognition is there any real hope of increasing the present extremely low survival rates.

It is generally agreed that radiologic examination offers the simplest, most available, and probably most accurate method for diagnosis.[5-7] With this in mind and also with a view to correlating the roentgenologic observations, we undertook a review of the cases of gastric cancer at the Ochsner Clinic and Ochsner Foundation Hospital.

MATERIAL

A diagnosis of cancer of the stomach was established 290 times in 150,000 consecutive new patient registrations. Eleven of these were excluded because they were sarcomas; these will be considered in a separate report. Of the 279 carcinomas, 32 had to be excluded because of incomplete roentgenologic study or because of the unavailability of the films. The remaining 247 cases form the basis for this report. The roentgenograms and fluoroscopic reports of all but 9 of these were reviewed by us. In these 9, a report by a competent radiologist who performed the examination was used, since the films were not available for restudy.

ANALYSIS OF CASES

Area of Involvement: Contrary to the usual concept that the lesser curvature of the stomach is more frequently involved than the greater curvature,[6] in our series the distribution at these two sites was almost the same (Fig. 1), being 59.5 per cent in the former and 60.5 per cent in the latter. These figures indicate, of course, involvement of both curvatures in many patients, which is almost inevitable in advanced disease.

Our data support the general opinion that the lower half of the stomach is more frequently the site of malignancy than the upper half.[8] The cardia and fundus were the sites of disease in 25.1 and 18.6 per cent, respectively, whereas the gastric antrum and pyloric areas were involved in 62.4 per cent of cases. From a roentgenologic diagnostic viewpoint, it is fortunate that gastric cancer has a predilection for the distal half of the stomach, since this portion is more easily examined because of its lower position in relation to the thoracic rib cage and its more anterior location in the abdominal cavity. Both factors favor manipulation at fluoroscopy and compression film technic, methods which are accentuated in modern diagnosis.[8, 9]

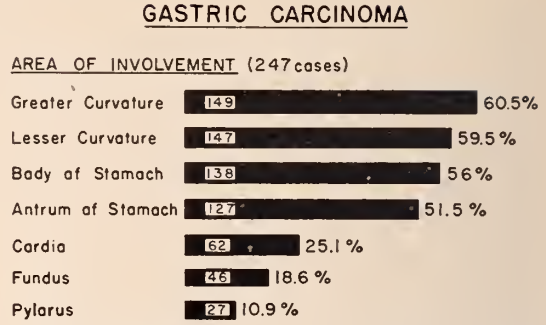


Figure 1. Distribution of 247 cases of gastric carcinoma according to area of involvement.

Roentgenographic Observations: A *constant filling defect* in the outline of the stomach, caused by neoplastic growth above the surrounding mucosa, which has been considered the fundamental roentgenologic sign in gastric carcinoma,[9-11] was observed in 60.5 per cent of our cases (Fig. 2). When the stomach is filled with barium mixture, a large fungating mass (Fig. 3) may stand out in bold relief along the gastric contour. Demonstration of smaller lesions requires a more

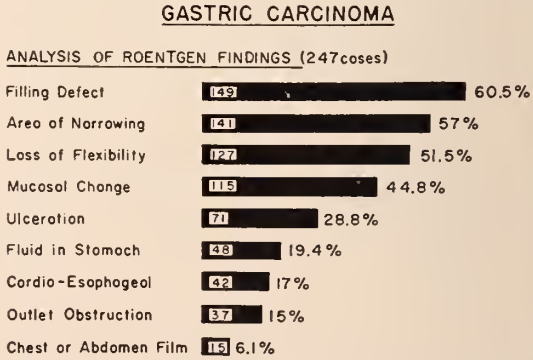


Figure 2. Roentgenographic observations in 247 cases of gastric carcinoma.



Figure 3. Filling defect on greater curvature of stomach.



Figure 4. Area of narrowing, lower half of stomach.

subtle approach, as they may be observed with only a small amount of barium coating the gastric mucosa. Kirklin,[12] as Carman before him, stressed the imperative necessity of alert, methodical and understanding fluoroscopic study of the gastric mucosa. The examination must be done after only one or two swallows of the barium mixture. Shanks [13] emphasized this by quoting with approval Berg's aphorism, "The less you give the more you see." The desirability of visualizing the stomach in the supine and prone positions, as well as in the erect one, has also been emphasized.[9]

Narrowing of the gastric outline (Fig. 4) and *loss of flexibility* of the stomach wall, which were noted in slightly more than one half the cases in this series, are usually related. They result when the tumor infiltrates the wall of the stomach, stiffening it and preventing normal flexibility and distensibility. In advanced lesions the whole stomach may be involved, producing a "leather bottle stomach" or linitis plastica. A less extensive lesion may be limited to one part of the stomach, or even one curvature alone. Disordered gastric peristalsis may at times be associated with these infiltrative changes in the wall of the stomach. Detecting alterations in the peristaltic waves is of debatable value, and in our experience has been of only limited diagnostic aid.

Changes in the appearance of the gastric mucosa were present in slightly less than half the cases in the present series. These produce two quite different appearances. In one type the mucosa appears flattened and "washed-out," with loss of the normal pliable folds. As seen in profile, there is a fine uneven irregularity, suggestive of small mucosal ulcerations. Kirklin,[12] who described this as a "granular internal relief," considered it one of the most reliable signs of scirrhous carcinoma. In the other, less common type of mucosal change the folds are larger than average and show evident irregularity and deformity. These changes result from infiltration of the mucosa by the cancer, which produces a stiffening of the mucosa. It is this stiffening and irregular deformity of the mucosal folds which usually permit differentiation from "gastritis." Like-

wise, in our experience, associated changes are almost always present to aid in the diagnosis. Rarely does gastric carcinoma produce only enlargement of the mucosal folds.

Ulceration as a roentgenologic feature in gastric cancer is a complex and interesting problem. The controversy continues as to whether or not benign gastric ulcers frequently become malignant. The current trend seems to be toward the belief that ulcerating carcinoma is generally cancer from the onset.[14-17] Roentgenographic evidence of ulceration (Fig. 5)

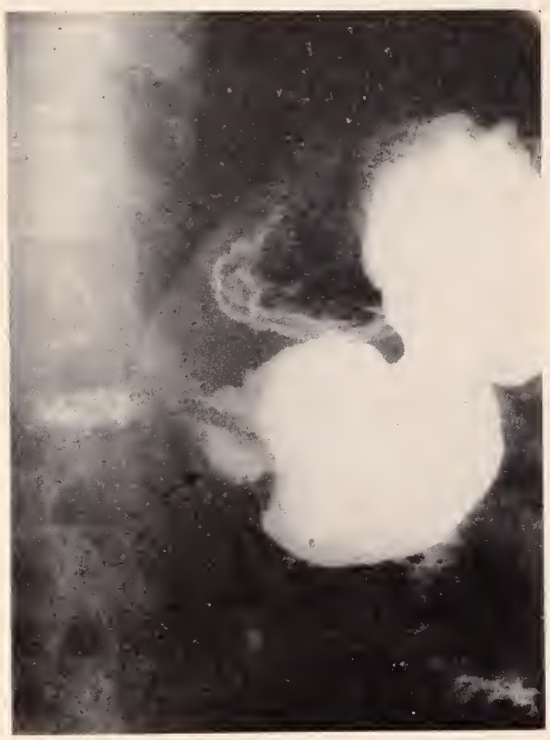


Figure 5. Ulcerating carcinoma on greater curvature side of gastric antrum. Note so-called "meniscus sign".

was found in 28.8 per cent of our series. Of these, 48 were less than 2 cm. in size, 32 being on the lesser curvature and 18 on the greater curvature. One showed ulceration on both curvatures. Of the 26 ulcerations greater than 2 cm. in size, 11 were on the lesser curvature (3 in antrum, 8 in body of stomach), 14 on the greater curvature (4 in antrum, 10 in body), and one on the posterior aspect of the fundus of the stomach.

Much has been written about differentiation of benign and *malignant ulcers.* Factors favoring a diagnosis of malignant ulcer are: older age of patient, nontenderness over visualized ulcer, associated mass, location of ulcer in prepyloric area or greater curvature, larger size of ulcer, irregular ulcer crater, stiffening or alteration of adjacent mucosa, inset of ulcer in relation to normal mucosal outline, and the "meniscus sign" of Carman and Kirklin due to the raised neoplastic margin of the malignant ulcer. When the barium coated stomach is compressed, with the malignant ulcer in profile, a translucent zone about the base of the ulcer which has the appearance of a meniscus is visualized; when seen *en face* this zone appears as a halo about the ulceration.[12, 18] No one of these observations in itself is definitive. Failure to respond promptly to adequate medical therapy is as important as any other factor. Evaluation of this healing response by serial roentgenologic study is not always easy. We agree with Shanks [7] that "if, after careful survey of all the x-ray features, there is doubt (and there often is), the radiologist should not hesitate to say so . . . Surgical exploration may be necessary. It is far better to cure a simple ulcer by partial gastrectomy than to miss a carcinoma."

It is interesting that 3 of our cases occurred in patients with a known "gastric ulcer" which had been treated medically at the Ochsner Clinic for periods of one to six months; in 4 others the "gastric ulcers" had been treated by other physicians for periods of two to twelve months. It is this feature about gastric ulceration —that 10 to 20 per cent of those considered originally benign are proved subsequently to be malignant—which has led Ochsner and Blalock [19] and other surgeons to advocate prompt excision for ulcerating disease of the stomach.

Fluid in the stomach at the beginning of the examination, despite fasting, was observed in 19.4 per cent of these patients. Such observation should arouse suspicion of some obstructive lesion at the gastric

outlet. This is not always indicative of obstruction; however, as some patients will have ingested fluid without admitting it. In others, the flow of gastric secretion may be excessive or pylorospasm may be responsible. Although it may alert the examiner to possible outlet obstruction, the presence of excessive fluid seriously hampers examination of the gastric mucosa. If the gastric contents cannot be aspirated before the examination, it is usually wise to reexamine the patient on a subsequent day.



Figure 6. Cardio-esophageal type of tumor.

In 17 per cent of our patients the *cardio-esophageal* area (Fig. 6) was involved. This is the same percentage reported by Pack,[20] who added, "In our experience most cancers involving the lower esophagus are found to be of stomach origin." Cancer originating in the stomach readily spreads to the esophagus. Reporting that 22 per cent of resected carcinomas of the stomach were located in the region of the cardia, Sherman[21] stressed the features of mucosal alteration and infiltration with rigidity or contour change.

Outlet obstruction (Fig. 7) was present in 15 per cent of the 247 patients. Re-



Figure 7. Outlet obstruction with dilated stomach.

tained fluids or food may obscure the features which would suggest neoplastic obstruction, such as irregular narrowing, filling defect, and loss of flexibility. It is, therefore, extremely important to examine the stomach when it is empty. An annular neoplastic lesion at the outlet may readily mimic a chronic stenosing gastric or pyloric ulcer. Visualization of a large stomach with flexible walls does not mean that the obstructing lesion is necessarily benign.

In 6 per cent of these 247 patients, or 33 per cent of the cardio-esophageal cancers the tumor could be seen in plain roentgenograms of the chest or abdomen. This is dependent upon the tumor being cast into relief by air in the stomach. Such tumors must of necessity be fungating masses and must almost always be in the fundus or at the cardia of the stomach. This is an interesting and important observation, indicating that the gastric air bubble should be carefully scrutinized in all films of the chest and abdomen. In reviewing 68 cases of cancer at the cardia of the stomach, Kirklin and Gilbertson[22]

found that about half of these could be seen as a projecting soft tissue mass in the gastric air bubble. As Templeton [9] pointed out, the tumor is more clearly defined by coating it with barium and then visualizing it in the air bubble.

Negative Roentgenograms: Cases in which a significant gastric lesion was not discerned were included in this study in an attempt to detect faults in the examination. There were 13 such cases in this series; this represents a known diagnostic error of 5.2 per cent. In order to avoid bias in favor of the radiologist, fairly vigorous standards were established. Thus, included among these 13 cases are 1 in which carcinoma of the pancreas was the radiologic diagnosis and 2 in which carcinoma of the esophagus was correctly diagnosed but an associated gastric neoplasm was not detected.

Worthy of note is that in 6 of these 13 cases a positive diagnosis was made on re-examination—2 within one week, 3 more within one year, and 1 three years later. In 2 additional cases, in which the films showed positive evidence of disease, which was overlooked, conspicuous lapses of personal judgment must be accepted. Thorough and conscientious work will reduce errors to a minimum.

A gastric cancer which is missed on initial roentgenographic examination rarely remains undetected for a prolonged period. In this series one case was classified as "missed," which showed extensive disease three years later. This may be too critical a criterion, for these lesions are by nature progressive, and often rapidly so. In the usual case, re-examination is soon demanded, or else the associated findings are so compelling that exploratory laparatomy is undertaken despite the negative radiologic report.

Five Year Survival: Twelve patients survived at least five years after surgical excision of the carcinoma, all of whom had lesions of the distal half of the stomach. Two showed outlet obstruction, 8 involvement of the gastric antrum, and 3 the body of the stomach. In 6 the type of lesion was a marginal filling defect due to the fungating tumor, and in 5 it was an ulcerating lesion. Two of the ulcerations were less than 2 cm. in diameter; 3 were greater than 2 cm. In 1 the stomach was considered normal roentgenographically.

Types of Roentgenographic Pattern: There are five fairly distinct roentgenographic patterns which cancer of the stomach may exhibit. Based upon these gross manifestations, a satisfactory roentgenologic classification is possible (Table 1).

TABLE 1
TYPES OF GASTRIC CARCINOMA IN 247 CASES

TYPE	CASES	%
Cardio-esophageal	42	17
Fungating	149	61
Ulcerating	71	29
Infiltrating	127	52
Obstructing	37	15

In advanced disease combined types are seen.

At the upper orifice of the stomach, where the esophagus is readily involved, cardio-esophageal carcinoma is found. This type accounted for 17 per cent of the 247 cases in our series. Disease which manifests itself chiefly by exuberant growth protruding into the gastric lumen produces a fungating or polypoid lesion, noted in 61 per cent of these series. Ulcerating carcinoma was seen in 29 per cent. Infiltrating lesions result in thickening and stiffening of the gastric wall, with obliteration or deformity of the mucosal pattern, often called scirrhous carcinoma. We observed these changes in 52 per cent of the patients. In his review of gastric neoplasms, Stout [14] listed these lesions with the following percentages: fungating 22.7 per cent, ulcerating 27.4 per cent, infiltrating 12.9 per cent, with 37 per cent showing mixed characteristics.

At the lower gastric orifice, carcinoma may result in outlet obstruction. This was found in 15 per cent of our series.

CONCLUSIONS

1. Cancer of the stomach is a common neoplasm, with an insidious onset and a high mortality.

2. Roentgenologic examination of the

stomach is at present the easiest, most available and probably most accurate method of diagnosis.

3. The examination must be methodical and thorough, with careful fluoroscopy and compression spot-films in addition to conventional films.

4. There are five roentgenographic patterns of cancer of the stomach: cardioesophageal, fungating, ulcerating, infiltrating, and outlet obstruction.

5. If the results of the roentgenologic examination are inconclusive, prompt reexamination is recommended. If doubt still remains, gastroscopy and exploratory laparotomy deserve immediate consideration.

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POTENTIAL DANGER IN THE TREATMENT OF ASTHMA WITH ARSENIC CONTAINING MIXTURES

Arsenic has long been known as a dangerous drug and as an insidious poison. In recent years, an arsenic containing mixture has been advocated by certain practitioners for the treatment of asthma. These prescriptions contain inorganic arsenic in the form of Fowler's solution (potassium arsenite). One reported prescription for this type of mixture is as follows:

Fowler's solution	6.00 cc.
Potassium iodide	6.5 Gm.
Tincture digitalis	2.33 cc.
Saccharin	0.065 Gm.
Elixir of phenobarbital	q.s. 120 cc.

The dosage of Fowler's solution (potassium arsenite) in the prescription is approximately 3 minims per teaspoon. In certain other mixtures there may be three times as much arsenic, and in one reported case the patient was taking 20 to 28 drops of Fowler's solution three times a day.

Various reports have been made indicating that these asthma remedies have been shipped through the mails over an extended period, during which the patient was not seen or examined for the possible toxic effects the arsenic might have produced. Sollman [1] has stated: "Inorganic arsenic is capricious, unpredictable, and uncontrollable both as to good and harm; but the harm is more certain and generally more frequent than the good."

Inorganic arsenic and organic arsenic are both capable of acute and chronic poisoning with far reaching effect. Symptoms appear with reference to all organ systems and may produce a variable number of disease pictures. The development is insidious and fatigue and loss of energy may be the only early manifestations. In the nervous system, there may be blindness, sensory disturbances, pains in the joints, sensory and motor paralyses, possibly with muscle atrophy and hypesthesia. In the gastrointestinal system, there may be jaundice, signs of toxic hepatitis, diarrhea, anorexia, emaciation, and nausea. Acute hepatitis may be fatal. The effects produced in the skin are numerous, such as edema, hyperhidrosis, flushing, acne, eczema, scaling of the skin, keratoses of the palms and soles, and a pigmentary condition. The toxic effect on the bone marrow may produce aplastic anemia.

Inorganic arsenic is absorbed promptly through the intestinal tract, part of which is excreted in the urine, and other portions go to the epithelial and, to a less extent, the endothelial structures. Arsenic may be

found in the urine many months after the cessation of its ingestion. It is stated that it may be found in the hair and in the nails for an indefinite number of years after ingestion.

A recent article by Hansen-Pruss [2] gives the report of a study of 17 adults, ranging in age from 33 to 65. These patients received inorganic arsenic in the form of an asthma mixture, such as the "Gay Treatment," or possibly, variations of this formula. The individuals studied received this treatment over a period ranging from two weeks to two and one-half years. The time interval elapsed between the last administration of inorganic arsenic and the time they came to Duke Hospital under this investigator ranged anywhere from three weeks to three years. Fifteen of the 17 patients gave a positive test for arsenic when their hair was examined. Seven of the 17 had a urinary content of arsenic which exceeded the normal. Skin lesions varied from a mild and transient erythrodermia to an irreversible hyperkeratosis involving mainly the extensor surfaces of the extremities and the soles of the feet. Two of the group had abnormal biochemical tests compatible with liver damage. A majority of the group developed some form of gastrointestinal complaint. Symptoms in this field appeared two to six weeks after the treatment had been started with arsenic.

In addition to the reports by this author, there are other articles in the last several years [3-6] showing the serious toxic effects from the arsenic contained in this treatment. Consideration of the known facts about the toxicology of arsenic and the data presented in these several reports indicates that the tolerance, as has been known for generations, for arsenic is variable. It also indicates that in certain individuals there is an extreme susceptibility to the poisonous effects of arsenic, and that in such individuals serious toxic degenerations are set up with the inorganic form in a subtle fashion, just as much as with the organic form when organic compounds of arsenic were being used in the treatment of syphilis.

Among the conclusions offered by the author of the most recent article,[2] it is stated that there is no authenticated therapeutic reason why inorganic arsenic should be effective in asthma, and that its administration is often deleterious. It is further stated that the ingestion of inorganic arsenic compounds produces immediate or delayed skin reactions in many individuals. The latter appear usually after three to eight years, are irreversible, and at times are carcinogenic. It is also concluded by this author that the 17 patients reported on were not benefitted by this type of treatment.

It is quite clear then that arsenic is an insidious poison and is to be used only with great care under adequate supervision. It is also to be remembered by physicians that an individual suffering from asthma and presenting bizarre and unusual symptoms may be one who has had this type of treatment. It becomes necessary, therefore, to suspect the toxic effects of arsenic in any asthma patient.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF PRESIDENT

Soon after adjournment of the House of Delegates last May, it became necessary to focus attention on the proceedings of the State Legislature. It was gratifying to see at one committee hearing over two hundred physicians from all parts of the state. This is the kind of assistance that our legislative committee must have if we expect to accomplish anything constructive in legislation for better health of the community. Taking everything into consideration, the results were good. However, for the first time in history, the chiropractic issue came to the floor of the House of Representatives as a proposed Constitutional Amendment. Though this was soundly defeated, it is evident that sentiment in favor of licensure for this cult is becoming stronger every day. If we desire to continue this fight, and continue we must, a sound program must be developed in the Louisiana State Medical Society to work every day of every year instead of just a few weeks before the session of the Legislature.

The matter of medical testimony in the courts is important. In a court of law when a physician is called as a witness he not only testifies for a patient and his lawyer, he represents a great profession and by his performance which is given in public, he can reflect credit or discredit on the whole medical profession. Court records bear witness to the fact that a few members of this noble profession at times appear in court unprepared, some are inexperienced and incompetent, and only a few, thank God, are dishonest.

Malpractice cases have increased, the amount of money granted by the courts has also increased tremendously. The attorney for the Medical Defense Committee handled sixteen cases for the Society in 1954, and is prosecuting at present approximately fifty chiropractic injunction suits for the Louisiana State Board of Medical Examiners. He advises there were numerous other malpractice claims handled by insurance companies and not reported to the Society. Many of the answers to prevention of further increase in this insidious hazard may be found in the list of rules for prevention of malpractice suits which was mailed to every member of the Louisiana State Medical Society in February of this year. Proper indoctrination of new members by component societies, establishing grievance committees and discussion of fees with patients before treatment, also application of the Golden Rule will help materially. A poor medical record is all a plaintiff's attorney needs to obtain a quick, easy and lucrative judgment.

At the present time the analysis of the survey in the state in regard to malpractice insurance rates and the possibility of obtaining blanket coverage has not been completed. As to the possibility of coverage from the national level, this is remote because rates vary so markedly throughout the states.

In legal circles there are murmurs of a whitewash being given in our own investigations and reports by our committees. Each case must be thoroughly and honestly investigated and evaluated at local level. The inquiry should not originate with bias or prejudice in either direction, nor should the recommendation from the parish society committee bear false witness.

Uniform insurance blanks are near to becoming reality and this will come from AMA level where it belongs.

Membership and component society activity is improving because of the more realistic approach to our need for better public relations. There is much to be accomplished along these lines. It is impossible to accomplish what is necessary in this day and time with entire dependence on the voluntary part-time effort of the officers and the committees no matter how proficient or diligent they may be.

Activities of component societies lag perceptibly in some areas because of poor geographical distribution. For instance in the Seventh District, doctors of two parishes on the eastern end of the district rarely attend the Seventh District meeting. In the Third District a similar situation exists. If agreeable with the majority of members concerned, it will be proposed that a ninth district be added.

The physical facilities of the State Society office are totally inadequate. The Louisiana State Medical Society certainly should not be dependent for their office space forever.

All through the above one can denote a thread of much to be accomplished. There is reflected the need for something in organization that this Medical Society does not have. There has long been the need for closer contact between the Louisiana State Medical Society office and the individual member. Because the House of Delegates requested the Executive Committee to work out a plan for employment of public relations counsel and as a result of attendance at Public Relations Conferences in Chicago and Miami, a special committee was asked to work out the details. Every delegate has a copy of this report or will have by the time the 1955 House of Delegates convenes. A considerable number of component organizations

have been briefed on the details. The reason this was done is that if this program is accepted it will be necessary to raise the dues again.

A full time layman trained in public relations can assist the component societies by setting up contact meetings of parish society officers with a public official and his physician before and after his election to an office concerned with the health of the community. This elected representative will know of the attitude and program of organized medicine before the opposition has developed its program. The public relations director will be able to be present at meetings of the component societies for advice and assistance in arranging membership canvassing, TV and radio programs, development of indoctrination and grievance committee programs. It is visualized that the function of this office will be varied and will bring about better organization and understanding. There should be no authority as to policy vested in this office. Both the Council on Medical Service and Public Relations, and the Public Policy and Legislation Committee will be well served by this employee; overlapping activities of these two groups can thus be avoided.

Recommendations

1. Increase dues ten dollars yearly to develop public relations department.

2. Increase dues five dollars yearly to establish a fund for a domicile.

3. Make provision for a ninth district if no major objection from members so concerned.

4. Send copies of abstracted Minutes of House of Delegates to presidents of component societies for their information with suggestion that they be read to the members.

5. Encourage the practice of physicians insisting that prescriptions be filled at pharmacies of patient's own choice (a step forward in keeping peace and harmony resulting from personal communication with representative of Louisiana Pharmaceutical Association).

6. Serious thought be given to the problem of integration. The Louisiana State Medical Society must be prepared for any eventuality.

7. Resolution to AMA with copies to other state societies, requesting medical schools to intensify medico-legal courses, with emphasis on medical testimony and prevention of malpractice cases.

8. President of each component society be urged to request a lawyer to address each society on malpractice prevention and medical testimony once each year.

9. Programs related to School Health, Mental Health, Rural Health and Health Council work should continue to be of interest and concern to the physician and organized medicine.

WALTER MOSS, M. D., President

RECOMMENDATION FOR ADMINISTRATION OF THE SALK VACCINE

The National Foundation for Infantile Paralysis announced today that it would follow the recommendation of Dr. Jonas E. Salk that for the year 1955 vaccine be administered in two doses, separated by an interval of two to four weeks, followed by a third dose not earlier than seven months later but before the 1956 poliomyelitis season.

Dr. Hart E. Van Riper, Medical Director of the National Foundation, stated that this decision was made on the recommendation of the Vaccine Advisory Committee of the National Foundation, consisting of Dr. Thomas E. Rivers, Chairman, Director of the Rockefeller Institute for Medical Research; Dr. David E. Price, Assistant Surgeon General, United States Public Health Service; Dr. Richard E. Shope, member, the Rockefeller Institute for Medical Research; Dr. E. L. Stebbins, Director, School of Hygiene and Public Health, The Johns Hopkins University; Dr. Norman Topping, Vice President in charge of Medical Affairs, University of Pennsylvania, and Dr. Thomas Turner, Professor of Microbiology, School of Hygiene and Public Health, The Johns Hopkins University.

The pharmaceutical houses manufacturing the Salk vaccine agreed to supply the National Foundation sufficient vaccine to immunize all children in the first and second grades throughout the United States and its territories, and all children who participated in the 1954 field trials but who did not receive vaccine. The total number of these children is estimated to be 9,000,000.

Reducing the number of doses that can be given before the oncoming epidemic season from three to two, as recommended by Dr. Salk, will require the use of approximately 9,000,000 less doses of 1 cc. each than would otherwise have been necessary. These 9,000,000 doses will remain with the pharmaceutical houses for distribution through commercial channels and will provide the first two doses for an additional 4,500,000 children immediately.

Since Dr. Salk's recommendation is that the third dose be given not earlier than seven months later, it will be impossible for the National Foundation to offer that dose to the same children, for obvious reasons. This fact, however, will be compensated by the immediate availability through commercial channels of the first two doses for an additional four and a half million children because of the National Foundation's following Dr. Salk's recommendations.

The National Foundation will offer a booster dose to the 500,000 children who actually received vaccine in the 1954 field trials, which was also recommended by Dr. Salk.

Dr. Van Riper also announced that the National Foundation was requesting all pharmaceutical houses to ship immediately sufficient vaccine to cover the first dose.

CONFERENCE ON VACCINE ALLOCATION: AMA TO PARTICIPATE

Following announcement that the Salk vaccine was effective in preventing poliomyelitis, these developments occurred in Washington:

1. President Eisenhower ordered a national survey to determine a fair voluntary method for allocating supplies, with a general conference of interested associations scheduled on April 22.

2. The White House announced that full information on Dr. Salk's vaccine would be turned over to every nation with which the U. S. has diplomatic relations, including a number behind the Iron Curtain. This was regarded mainly as a humanitarian gesture, as data on the vaccine and the field tests have been made public.

3. The Department of Health, Education, and Welfare officially licensed six firms to manufacture and sell the product, thereby leaving decisions on allocation and price in the hands of private industry, public health departments, and physicians.

Under instructions from President Eisenhower, Secretary Hobby of the Department of Health, Education, and Welfare has begun a survey to determine the best way to insure the "fair distribution" of Salk poliomyelitis vaccine to children in greatest need of it. The President said he was interested in setting up a voluntary system for allocating the product until expanding production facilities can meet the demands.

Mrs. Hobby already has held conferences with medical officers of federal agencies to get basic information and their recommendations. Next step is contact with representatives of the AMA and other groups, as spokesmen for physicians, and with representatives of all other interests involved in the vaccine question, including pharmaceutical houses. A meeting was tentatively scheduled for Friday, April 22, when these groups would meet with government officials.

Pres. Eisenhower asked that the discussions cover two points, "to insure that channels of distribution of the vaccine be kept open and that equal opportunity of treatment is given every section of the country." He said he wanted a mechanism set up whereby the doctors and the drug industry would "see to it that no child who should receive the vaccine will be denied it."

The six firms licensed by the Department of Health, Education, and Welfare to make and distribute the vaccine are: Cutter Laboratories, Berkeley, Calif., Eli Lilly Co., Indianapolis, Ind., Parke-Davis & Co., Detroit, Mich., Pittman-Moore Co., Zionville, Ind., Sharp and Dohme, Philadelphia, Pa., and Wyeth Laboratories, Inc., Marietta, Pa.

INFORMATION ON INSECTICIDE POISONINGS REQUESTED

A special grant has been made to the Department of Pathology, Louisiana State University School of Medicine, to investigate the mechanism of action of anticholinesterase insecticides and the therapy of poisoning resulting from excessive exposure. The widespread use of Parathion and TEPP (tetraethyl pyrophosphate) in agriculture, industry and the home is causing an increased number of accidental exposures. Our interest encompasses clinical observations as well as studies on fatal cases at autopsy.

If a case of poisoning by any of the anticholinesterase insecticides comes to your attention, it would be appreciated greatly if you would allow us to obtain information on the case. Because of the rarity of this condition and certain unusual aspects of therapy we are prepared, when requested, to give recommendations as to treatment in a surviving patient. We are also prepared to send an investigative team at our expense.

Telephone calls to report cases and request information will be accepted at any time, day or night, to:

Dr. Stanley H. Durlacher, New Orleans,
Franklin 4141, collect

Department of Pathology
Louisiana State University
School of Medicine

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

ANNUAL MEETING LOUISIANA HEART ASSOCIATION

The Louisiana Heart Association will hold its annual meeting on June 16, 1955 in the Louisiana State University Medical School Auditorium, New Orleans. The scientific session will begin at 2:00 p. m., followed by the first annual assembly of Louisiana Heart Association members at 4:00 p. m. A public forum on heart disease will be held at 8:00 p. m., sponsored by the Louisiana State University Medical School and the Louisiana Heart Association.

CAUSES AND CURES TOLD FOR BACKACHES

Standing erect may help distinguish man from the animals but it certainly lets him in for a lot of trouble, a doctor of public health said recently.

Dr. James A. Tobey, Newton, Conn., said the human skeleton "is not particularly well adapted to the upright position," except for a short time when a man is young, "lean, lithe, and buoyant." The rest of his life, he is particularly prone to backache and other ills which might not occur "if he ran on all fours," Dr. Tobey said in the February issue of Today's Health magazine, published by the American Medical Association.

Instead of actually standing erect, many people "slouch and sag, droop and sway," sometimes because of fat or cares and emotional stresses. Other factors are extra high heels, occupational hazards, later stages of pregnancy, strains, and disease. Faulty body mechanics is one of the most common causes, one of the most important, and usually the easiest to correct.

The one-third of each day spent in bed may be a factor, he said. Mattresses should be flat and even, not too soft, and free of "hollows, lumps and slants." But a good mattress is not enough. There are 57 other possible causes of backache, Dr. Tobey said.

CRIPPLED CHILDREN'S HOSPITAL COMPLETED

The $1,750,000 Crippled Children's Hospital at New Orleans has been completed and has received its first patients. The facility, which will provide convalescent and rehabilitation care in beautiful modern surroundings, is open to patients from the entire state. Initial patients are from Lafayette, Crowley and New Orleans.

Children undergo surgery or pass the acute stage of their illness in general hospitals, then are transferred to the Crippled Children's hospital. After they no longer require hospitalization, they may receive follow up care through the hospital's extra large, air-conditioned outpatient department.

The hospital has 50 beds for inpatients, x-ray, laboratory, examination rooms, physical therapy cubicles, a Hubbard tub, whirlpool bath, therapeutic pool, plaster cast facilities, a large, specially equipped gymnasium, occupational therapy workshop, music room, two classrooms and other facilities.

Care of the patients may be financed through the state health department, National Foundation for Infantile Paralysis, National Society for Crippled Children and Adults and other health organizations, insurance plans, or by the patient, according to his ability to pay. All children up to the age of 21, regardless of creed, color or ability to pay may be admitted, but they must be handicapped children for convalescent or rehabilitation care, and in no case are they to be alcoholic, insane, custodial whether due to mental or physical handicaps, narcotics addicts or have a communicable disease.

Further information may be obtained from the Administrator, Crippled Children's Hospital, 200 Henry Clay Avenue, New Orleans.

BOSTON CLINICAL MEETING AMERICAN MEDICAL ASSOCIATION

November 29-December 2, 1955

All persons who desire a place on the lecture program at the Boston Clinical Meeting of the American Medical Association are urged to communicate immediately with the Chairman of the Program Committee—Theodore L. Badger, M. D., c/o Massachusetts Medical Society, 22 The Fenway, Boston 15.

Applications for space in the Scientific Exhibit are now available and will be sent on request. Exhibits will supplement the lectures as far as possible, and should portray subjects of a broad general interest. Requests for application should be sent to the Secretary, Council on Scientific Assembly, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois.

ANNUAL ASSEMBLY IN OTOLARYNGOLOGY

The Department of Otolaryngology, University of Illinois College of Medicine, announces its Annual Assembly in Otolaryngology from September 19 through October 1, 1955. This Assembly will consist of two parts.

Part I. September 19 through September 24, 1955, will be devoted to surgical anatomy of the head and neck, fundamental principles of neck surgery and histopathology of the ear, nose and throat. This week will be under the personal direction of Maurice F. Snitman, M. D.

Part II. September 26 through October 1, 1955, will be devoted entirely to lectures and panel discussion of advancements in otolaryngology. The chairman of this section will be Emanuel M. Skolnik, M. D.

Registration is optional for one or both weeks.

TENTH ANNUAL SCHERING AWARD COMPETITION OPENS FOR NATION'S MEDICAL STUDENTS

The tenth annual Schering Award competition for medical students has opened, it was announced by Robert W. Burlew, M. D., chairman of the award committee. Its aim is to encourage medical writing and exploration of current research literature.

Titles of three subjects on which American and Canadian students are invited to submit papers this year are: Current Concepts in the Management of Osteoporosis; Prevention and Treatment of Blood Transfusion Reactions; and Recent Trends in the Clinical Use of Adrenocortical Steroids.

Both a $500 first prize and a second one of $250 will be awarded for each of the three subjects. Outstanding authorities in each field will select the winners. Special recognition in the form of a professional gift will be given each student submitting a meritorious paper.

Deadline for entry forms specifying the choice of title is July 1st. Manuscripts should be mailed not later than October 1st. Students may compete individually or cooperatively in teams.

Information and instructions for the award competition are available from the Schering Award Committee, 60 Orange Street, Bloomfield, N.J.

PHYSICIANS OFFER IDEAS ON AUTO SAFETY

Physicians are continuing their search for a way to reduce highway accident deaths.

Two physicians, in letters published in a recent (Feb. 5) Journal of the American Medical Association, today debated the merits of auto safety belts and agreed that belts alone are not the entire answer. They said over-all automobile design must be improved and other safety measures developed.

The A.M.A.'s House of Delegates, meeting in San Francisco in June, passed a resolution calling for wider use of safety belts, and recommending that auto manufacturers emphasize safety in all car designs.

Dr. John H. Schaefer, Los Angeles, said he believes that auto seat belts as presently designed will save no lives. He said a device that would distribute force evenly over a large area of the body and would yield in absorbing this force would be "valuable."

He also said that placing seats facing backward and building them high enough to support the head would be a "logical answer to the problem of motor car collision, but I doubt that the public would accept it."

BOOK REVIEWS

Hernia: The Pathologic Anatomy of the More Common Hernias and Their Anatomic Repair; by Chester B. McVay, M. D., Springfield, Illinois, Charles C Thomas, Pp. 40, Price $4.75.

This is an excellent review of the hernia problem in general and the more common hernias. It is well written and contains numerous self-explanatory semi-diagrammatic illustrations. It gives a clear concise picture of the anatomical approaches and is recommended for use by surgeons and students.

CHARLES C. ABBOTT, M. D.

Neck Dissections; by James Barrett Brown, M. D., and Frank McDowell, M. D., Springfield, Ill., Charles C Thomas, 1954, Pp. 163, Price $7.50.

This book discusses the indications, limitations, complications, and usefulness of neck dissections. It presents techniques of various types of neck dissections. It also discusses the treatment of lip and oropharyngeal lesions. The discussion of preoperative and postoperative treatment is good. There are many pictorial case presentations and a fine series of colored drawings of neck dissections. It is recommended to anyone interested in cancer of the lip, oropharynx, and neck dissections.

CHARLES C. ABBOTT, M. D.

Fundamentals of Neuropathology; by William Brooks Dublin, M. D., Springfield, Illinois, Charles C Thomas, 1954, Pp. 685, $18.50.

Of the several textbooks recently published on the fundamentals of neuropathology, Dr. Dublin has written one of the most practical and readable. The purpose of this book is to emphasize neuropathology in terms of general pathology. The clinico-pathological correlations are excellent and make the book good reading for the general pathologist as well as for the clinician. Pertinent associated pathological findings outside the central nervous system are skilfully blended in the text. The laboratory techniques are discussed in the beginning of the book thus orienting the reader in the interpretation of later histologic description. Laboratory staining methods which are likely to be of use in a general pathology laboratory are emphasized. Occasionally, the author is ambiguous in his description of a few of the rarer diseases, but this does not detract from the general usefulness of the book. The sections of the book are well organized. The gross and microscopic descriptions of the pathological lesions are adequate. The illustrations are excellent. The development of the nervous system and the histogenesis of its several cell types are well reviewed.

This is a practical textbook of neuropathology and the author is to be commended for his clear and concise presentation of a difficult subject. In the reviewer's opinion the bibliography would have served a better purpose had it been placed at the end of the appropriate chapters. The book is printed on good paper.

This textbook fills a long recognized need and merits little adverse criticism. It can be read by clinician and pathologist alike with considerable benefit to both.

JOHN H. DENT, M. D.

Review of Medical Microbiology; by Ernest Jawetz, Ph. D., M. D., Joseph L. Melnick, Ph. D., and Edward A. Adelberg, Ph. D., Los Altos, California, Lange Medical Publications, 1954. Illus. Pp. 360. Price $4.50.

This modestly priced, paper-bound textbook is intended primarily for the medical student, house officer, and practicing physician. It is clearly and concisely written with the effective use of underlines, and a revision is to be published every two years. This first edition seems to be fairly current on most subjects and offers a broad coverage, including material on bacterial cytology and physiology, variation, culture technics, chemotherapeutic and other antibacterial agents, as well as specific information on the most important pathogenic bacteria, rickettsiae, viruses and fungi.

In an effort to limit the size and therefore the cost of the book, the writers have been brief to the point of omitting some fairly important matters, i.e., there is no clear discussion of bacterial hemolysis on blood agar plates and in the section on blood groups no mention is made of the Rh factor. The discussion of the *Neisseria* group is extremely short, no more space being devoted to this than to the relatively unimportant pleuropneumonia-like organisms.

The order of chapters is faulty in one instance: allergy, hypersensitivity, and active and passive immunity are discussed before antigens and antibodies.

A major limitation of this text is the absence of specific references other than a list of general reference at the end.

However, the book is readable, concise, up-to-date, and seems to be especially good in its presentation of the material on viruses and rickettsiae.

WILLIAM A. PIERCE, JR., M. D.

Textbook of Pediatrics; by Waldo E. Nelson, M. D. (ed.) 6th ed., Philadelphia, Pa., W. B. Saunders Company, 1954, Pp. 1581, Price $15.00.

This edition is a continuation of the Griffith, Griffith-Mitchell series of text-books on Pediatrics. The foundation of the series was laid many years ago by Dr. Griffith of Philadelphia and the editorial responsibility was soon shared by Graeme Mitchell late of Cincinnati and at his death Waldo E. Nelson, who also joined Graeme Mitchell after the death of Dr. Griffith, assumed full responsibility for subsequent editions. The series for many years was confined to one volume, later it appeared in two volumes and is now presented in a single volume of 1581 pages.

As in most text-books of this magnitude Dr. Nelson has associated with him 72 contributing authors, each of whom are outstanding authorities in the special field of pediatrics on which they have written sections or chapters. The format has been very much improved over previous editions. The two-column page is used in keeping with what has now become a conventional style. It has long since been agreed that this style enables the reader to use a minimum amount of ocular effort because of the short lines.

The plan of the entire book as shown in the table of contents enables the reader quickly to obtain the information sought with the expenditure of a minimum amount of time and effort. The

text throughout the book is adequately illustrated with good photographs and a few colored plates.

This edition is dedicated to "The Doctor devoted to the welfare of children" as exemplified by Dr. Frank E. Stevenson, a colleague of the editor and contributors—whose influence is continued in the many physicians who as students, interns, and resident physicians saw in him an ideal.

This book will continue to serve students, general practitioners, and specialists in pediatrics just as previous editions have down through the years.

ROBERT A. STRONG, M. D.

Pediatric Diagnosis; by Morris Green and Julius B. Richmond, Philadelphia and London, W. B. Saunders Company, 1954. Pp. 436—xvii. Price $10.00.

In *Pediatric Diagnosis* the authors clearly summarize the diagnostic approaches used by the well grounded and thoughtful pediatrician. Skilfully woven into the text are certain therapeutic measures which the reader will find valuable additions to his armamentarium. The importance of growth and development as it effects the evaluation of signs and symptoms is clearly presented.

This book should appeal to a broad range of readers. The pediatrician will enjoy and profit by the excellent review. General practitioners will find reading this book an extremely painless way to improve his appraisal of both the sick and the healthy child. The medical student likewise will find this text most helpful when he is introduced to the complex phenomena presented by his first pediatric patients.

One of the virtues of the book is the fact that many controversial and unimportant details are omitted. The references are incorporated in the text and have been carefully selected. This innovation will serve to stimulate the reader's interest in the available current literature.

In general this is an excellent book. The authors are to be commended on their concise presentation of a broad and difficult subject.

JOHN H. DENT, M. D.

PUBLICATIONS RECEIVED

The Philosophical Library Inc., N. Y.: Pomp and Pestilence; Infectious Disease, Its Origin and Conquest, by Ronald Hare, M. D.; Management of Addictions, by Edward Podolsky, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Reflections on Renal Function, by James R. Robinson, M. D., Ph. D.; British Journal of Haematology, edited by J. V. Dacie, M. D.

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Notes on the Diagnosis and Management of "Dizziness"

I. Vertigo

The term "dizziness" (vertigo) should be restricted to the sensation of whirling or a sense of motion.[1] This sensation is usually of organic origin and is the tangible symptom of a specific pathology.

Moderate vertigo, with a sense of motion and a whirling sensation, may be produced by infection, trauma or allergy of the external or middle ear. Examination of the ear will usually disclose the abnormality.

Severe vertigo, which will not permit the patient to stand and causes nausea and vomiting, indicates an irritation or destruction of the labyrinth. The specific condition may be labyrinthine hydrops, an acute toxic infection, hemorrhage or venospasm of the labyrinth or a fracture of the labyrinth. Multiple sclerosis and pathology of the brain stem should be considered also.

It is important to learn if the patient's sensation is continuous or paroxysmal.[2] Paroxysmal vertigo suggests specific conditions: Ménière's syndrome, cardiac disease and epilepsy. Continuous vertigo without a pattern may be due to severe anemia, posterior fossa tumor or eye muscle imbalance.

Dramamine® has been found invaluable in many of these conditions. In mild or moderate vertigo it often allows the patient to remain ambulatory. A most satisfactory treatment regimen for severe "dizziness" is bedrest, mild sedation and the regular administration of Dramamine.

Dramamine is also a standard for the management of motion sickness, is useful for relief of nausea and vomiting of radiation sickness, eye surgery and fenestration procedures.

Dramamine (brand of dimenhydrinate) is supplied in tablets (50 mg.) and liquid (12.5 mg. in each 4 cc.). G. D. Searle & Co., Research in the Service of Medicine.

1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

2. DeWeese, D. D.: Symposium: Medical Management of Dizziness: The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.

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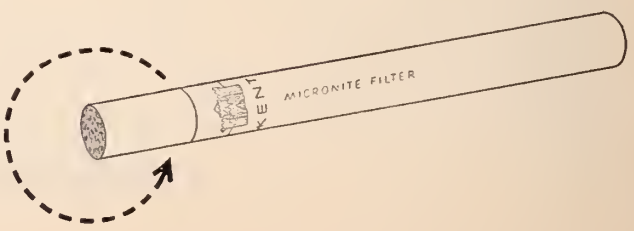
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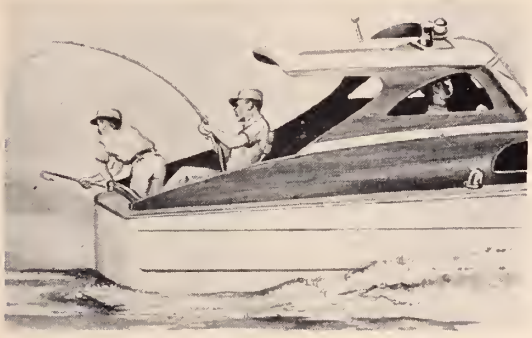


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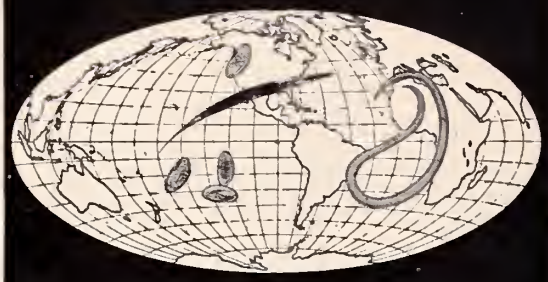
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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.: J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.: Brit. M. J. 2:755, 1953.

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Brown, H. W.: J. Pediat. 45:419, 1954.

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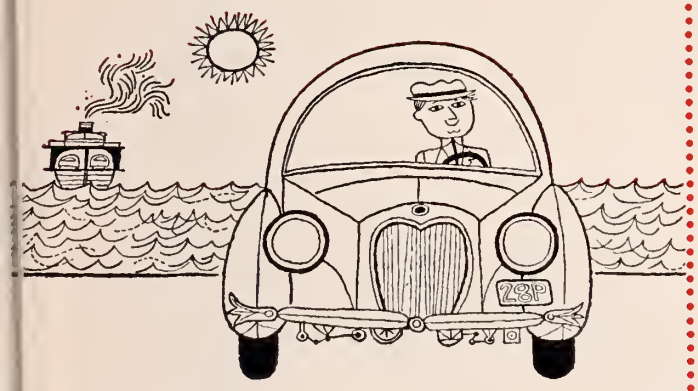
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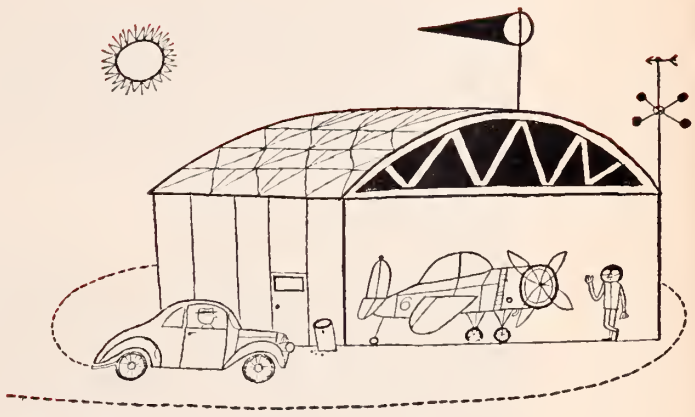






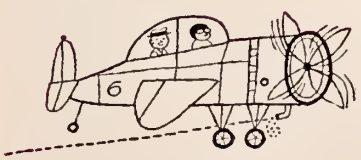






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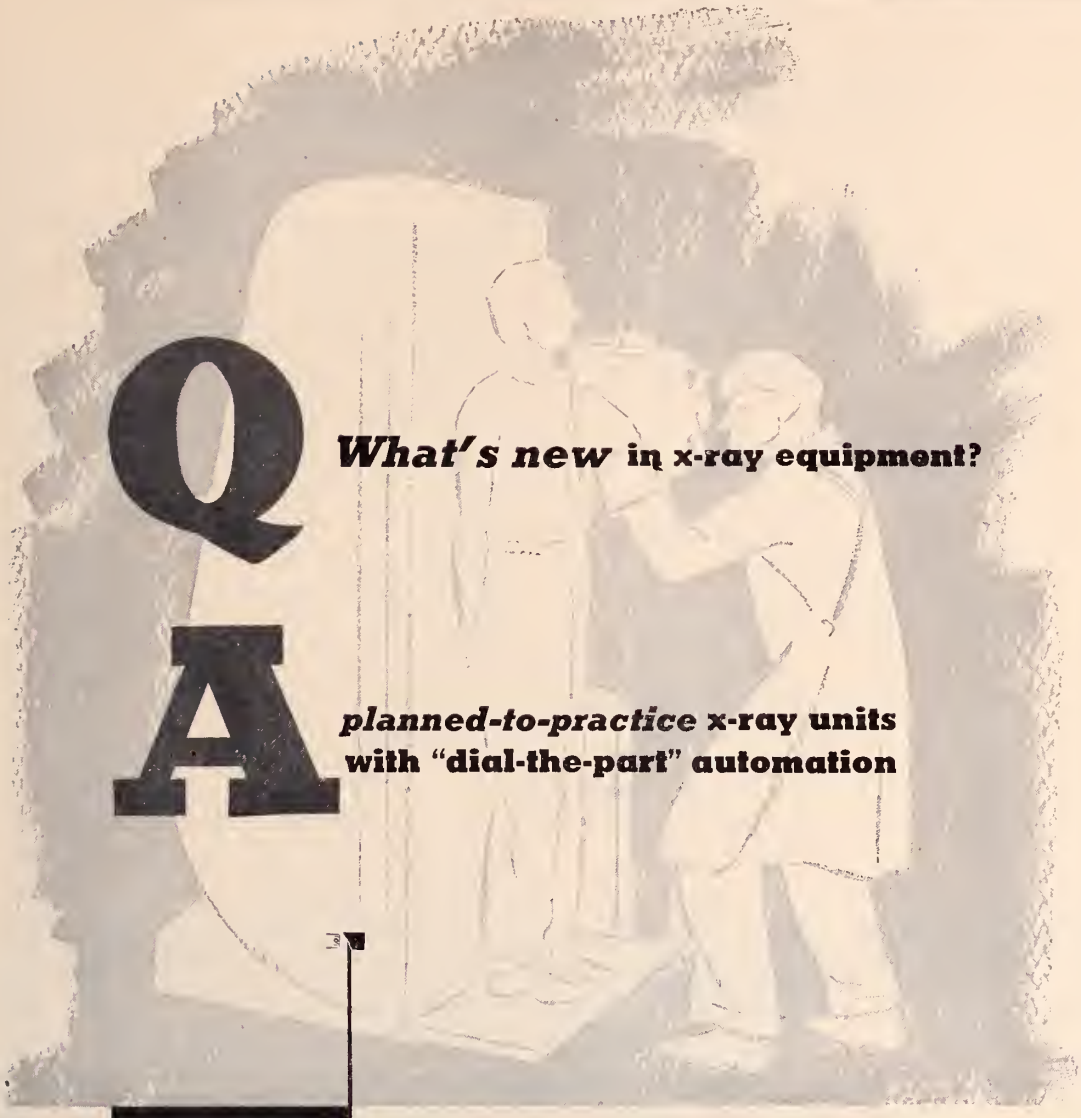


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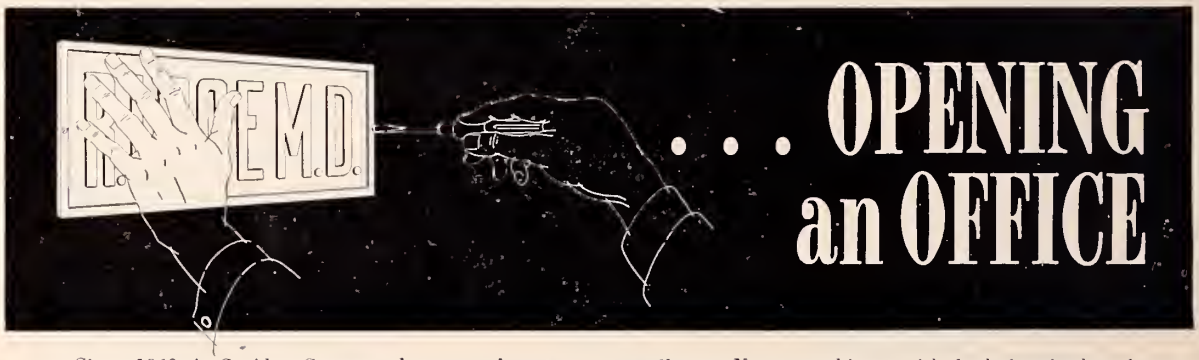
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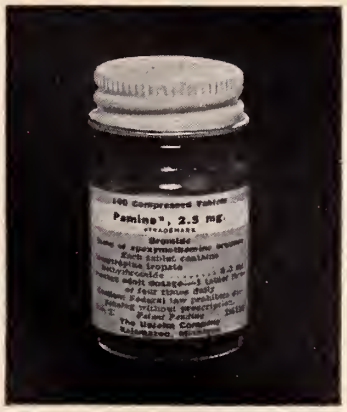
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Recent studies reaffirm the "hypothesis that atherosclerosis is fundamentally a metabolic disease subject to important dietary influences"[1] and do much to refute contentions that foods containing cholesterol should be avoided in general diets.

Arterial disease resembling that in human subjects was produced in Cebus monkeys fed diets high in cholesterol and low in sulfur amino acids. Within 2 to 8 weeks after initiation of the regimen serum concentration of cholesterol rose to levels of 300 to 800 mg. per 100 ml. "The hypercholesterolemia could be largely prevented by feeding 1 gram per day of dl-methionine or l-cystine as supplements to the diet." Also, the elevated cholesterol levels "could be restored to normal by feeding 1 gram of dl-methionine but only partially restored by 0.5 gram of l-cystine daily."

According to the investigators, the "vascular lesions were in the ascending aorta but extended from the valves of the left ventricle to the proximal portions of the carotid and femoral arteries . . . The aortic lesions were chiefly characterized by the presence of lipid-laden phagocytes and increase in collagen and elastic fibers. The lipids were in part cholesterol derivatives."

Cholesterol, an essential metabolite produced in intermediary metabolism,[2] is biosynthesized from dietary protein, fat, and carbohydrate.[3] Normally, its synthesis is exquisitely controlled to insure adequacy as well as to protect against an oversupply.[4] Furthermore, considerable evidence indicates that an increased cholesterol intake is not an etiologic factor in alleged aberrations of cholesterol metabolism such as atherosclerosis.

In widely variable amounts, cholesterol occurs in foods of animal origin—meat, poultry, fish and marine foods, eggs, milk products—all foods of great nutritive value.[3] Present knowledge in no way warrants alteration in the customary consumption of these foods because of their contained cholesterol.

Skeletal muscle of beef, lamb, pork, and veal provides but small amounts of cholesterol, approximately 0.06 Gm. per 100 Gm. moist weight of meat.[5] Since atherosclerosis may interfere sharply with normal nutrition, the patient should consume diets rich in protein foods (such as meat), vitamins, and fruit.[6] In addition to high quality protein, meat supplies valuable amounts of needed B vitamins and essential minerals.

1. Mann, G. V.; Andrus, S. B.; McNally, A., and Stare, F. J.: Experimental Atherosclerosis in Cebus Monkeys, J. Exper. Med. *98*:195, 1953.
2. Okey, R.: Use of Food Cholesterol in the Animal Body; Relation of Other Dietary Constituents, J. Am. Dietet. A. *30*:231 (Mar.) 1954.
3. McLester, J. S., and Darby, W. J.: Nutrition and Diet in Health and Disease, ed. 6, Philadelphia, W. B. Saunders Company, 1952, pp. 517-518.
4. Editorial: The Biosynthesis of Cholesterol, J.A.M.A. *152*:1435 (Aug. 8) 1953.
5. Okey, R.: Cholesterol Content of Food, J. Am. Dietet. A. *21*:341 (June) 1945.
6. Wright, I. S.: Arteriosclerosis, in Stieglitz, E. J.: Geriatric Medicine, Medical Care of Later Maturity, ed. 3, Philadelphia, J. B. Lippincott Company, 1954, chap. 28, p. 413.

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Dates for the course: Friday, June 3rd and Saturday, June 4th from 8:00 a. m. to 5:30 p. m. each day.

Fee for the course will be $15.00, which will include luncheon on Friday. The fee for the course may be paid at the time of registration.

The course will be held in the L.S.U. School of Medicine's auditorium. Registration will be at 7:30 a. m. on Friday, June 3rd.

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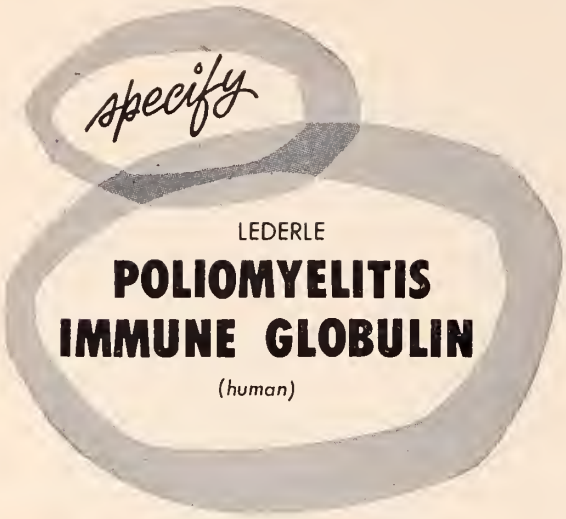
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(1) Butler, A. M., and Wolman, I. J.: Quart. Rev. Pediat. 9: 63, 1954. (2) Moore, I. H.: Journal-Lancet 74: 80, 1954. (3) Collins-Williams, C.: J. Pediat. 45: 337, 1954. (4) Clein, N. W.: Ann. Allergy 9: 195, 1951.

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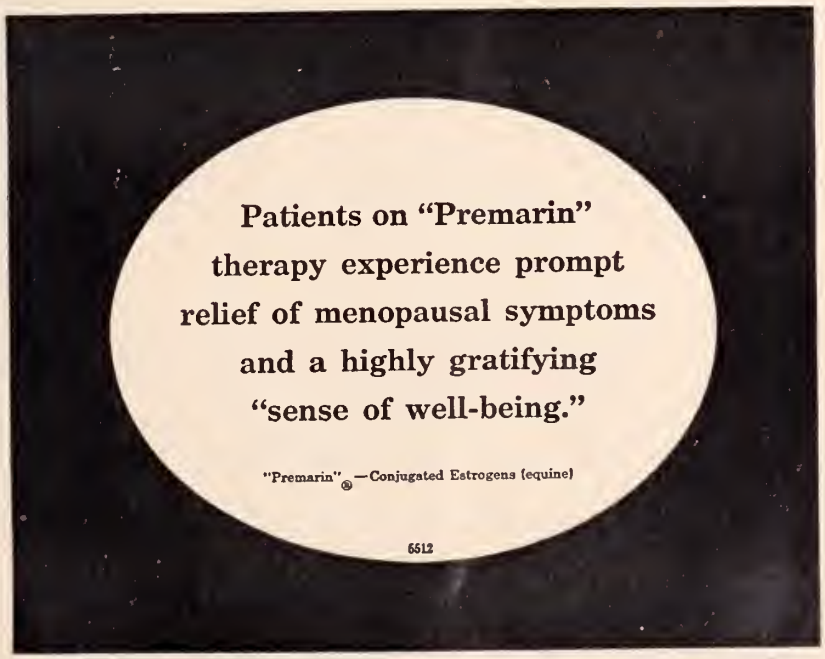
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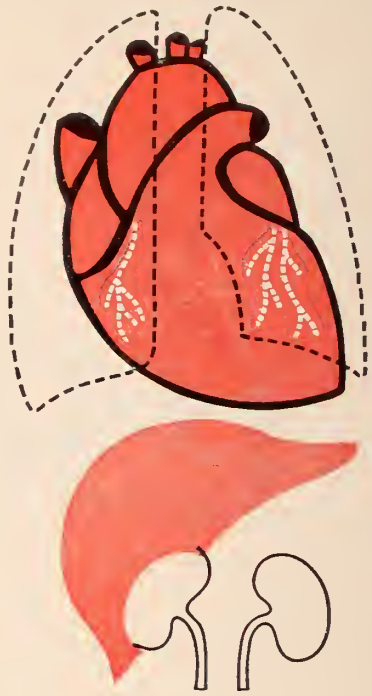
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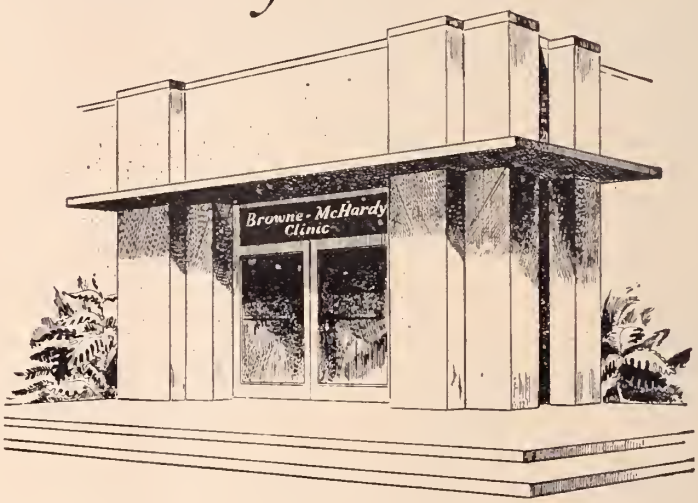
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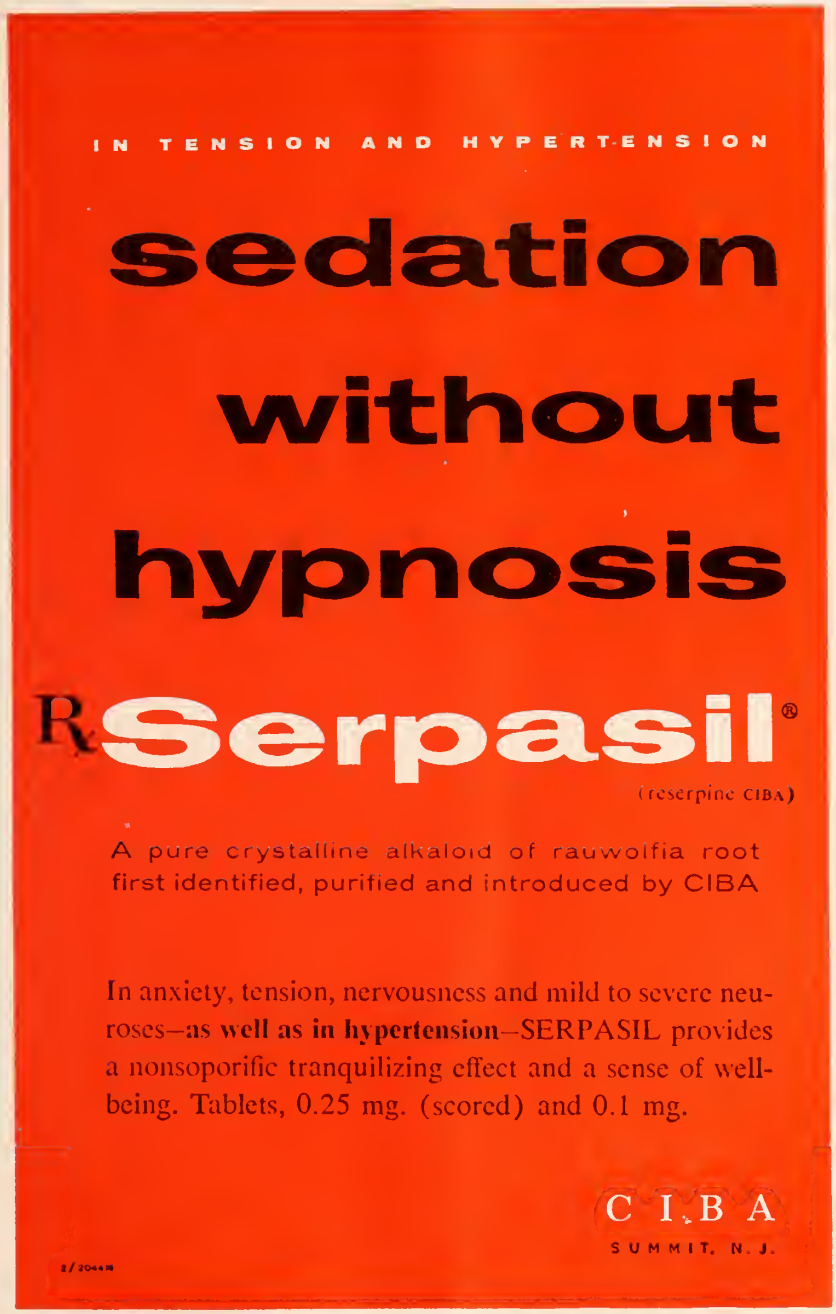
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SOME CAUSES OF CARDIAC ARREST *

JOHN ADRIANI, M. D. †
NEW ORLEANS

There are almost as many meanings to the term cardiac arrest as there are users of the term. The term is not easily defined. It should be used to designate unexplained, unexpected failure of cardiac action when all physiologic systems appear to be functioning normally. The impression has been created that a new perplexing clinical entity has been discovered. Actually the same difficulties previously experienced are now being designated by another name. A decade ago physicians were timid and limited resuscitation of the heart to the intracardiac injection of epinephrine. Today, when cardiac arrest is suspected the chest is promptly opened and attempts are made to restore the beat. Inasmuch as most cardiac arrests are associated with operation the subject is of especial interest to both surgeons and anesthetists.

Some say that cardiac arrest is on the increase. If this is true it is because situations leading to cardiac arrest are increasing. Some of these predisposing factors are: (1) more formidable surgery is being performed; particularly intrathoracic surgery. Factors precipitating cardiac arrest are greater in this type of surgery. (2) Operations are unnecessarily long. Refinements in methods of anesthesia and surgical technique have led some surgeons to become unduly complacent and to disregard operating time. Consequently four, five, and six hour procedures are not uncommon. (3) The widespread use of combinations of drugs, particularly the nonvolatile anesthetic drugs may have a bearing on the increased incidence. (4) The extension of the life expectancy of the general population accounts for the increase in the number of surgical patients in the upper decades. Many of these have advanced, degenerative diseases and do not always withstand the operation.

The problem of cardiac arrest presents two phases, that of prevention and that of treatment. Many cardiac arrests are unjustifiably blamed on anesthesia. Fatalities associated with and solely due to general anesthesia result from (1) asphyxia, (2) overdosage, (3) a combination of asphyxia and overdosage, (4) untoward reactions or to misuse of drugs. Fatalities ascribed to anesthesia but due to other causes usually result from (1) pulmonary emboli, from clots, air or fat or (2) cardiac failure from coronary insufficiency. Severe irreversible shock or massive hemorrhage causes death but rarely is it sudden. There is a forewarning of the catastrophe and death comes as no surprise. Cerebral accidents are uncommon during operation, and when they do occur, rarely precipitate sudden death. Adrenal insufficiency, though rare, may cause sudden death during operation.

---

* Presented at meeting of the Louisiana Surgical Society, October 31, 1954.

† Department of Anesthesia, Charity Hospital, and Dept. of Surgery, Louisiana State University School of Medicine, New Orleans, Louisiana.

When postmortem examinations are lacking, deaths are often ascribed to obscure highly speculative causes. The mythical status lymphaticus has, in the past, been used to excuse technical anesthetic errors. This syndrome does not exist as a clinical entity. Another convenient alibi for technical errors or unexplained fatalities is the somewhat controversial vago-vagal reflex. The occurrence of the reflex cannot be denied, but how often it causes fatalities is another matter. Many clinicians feel the reflex causes death only when associated with anoxia or carbon dioxide excess or both. Death does not occur if the subject is adequately ventilated irrespective of the intensity of the stimulus. The writer subscribes to this view.

Most fatalities due to anesthesia are unexpected and occur in the operating room. Some postoperative deaths, however, result from insidious deterioration not related to anesthesia which begins during operation. Others result from some difficulty with anesthesia during operation the results of which carry over to the postoperative period. The anesthetic death is delayed.

Fatalities due to asphyxia are due to (1) reduction of oxygen tension in the inhaled mixture below the physiologic limit. (2) Obstruction of the airway. (3) Hypoventilation from respiratory depression or apnea from respiratory paralysis. Anoxia is usually considered the responsible factor in obstruction and hypoventilation. However, respiratory acidosis may be more responsible than suboxygenation. Experimentally, ventricular fibrillation is easily induced by irritating the heart mechanically or stimulating the vagi during respiratory acidosis even though oxygenation is adequate.

Accidents due to administering inadequate concentrations of oxygen may be caused by (1) defective apparatus which fails to deliver the necessary gas flow, even though the instruments indicate an adequate flow; (2) inadvertently administering the wrong gas instead of oxygen; (3) mechanical factors due to defects in apparatus. Kinking, compressing, plugging or improper placement of endotracheal tubes, defects in the valves or tubing or improper use of shut-off valves may interfere with ventilation and cause asphyxia. Cylinders containing helium, nitrous oxide and ethylene have inadvertently been substituted for oxygen and the error has resulted in fatalities. (4) Administering gases of low potency, which require high alveolar partial pressure for anesthesia, above their safe limit, particularly when administered in resistant individuals. Death then occurs from anoxic anoxia. This type of accident is responsible for fatalities due to nitrous oxide or ethylene. In anemic individuals partial pressures of oxygen tolerated without harm by the average person, prove fatal. Anesthetists who rely upon cyanosis as a guide to the degree of oxygenation are deluded into a false sense of security when anesthetizing anemic patients. Cyanosis may not appear until fatal anoxia is present.

Overdosage of general anesthetics causes apnea which is easily corrected by adequate artificial respiration. It is possible, with most anesthetic drugs, to induce respiratory failure by overdosage and still sustain life by artificial respiration. The lethal dose of most anesthetic drugs is greater than the dose which causes medullary paralysis. The more potent and rapid acting an anesthetic is, the greater the danger from lethal concentrations. Fatalities from overdosage are often the result of nonchalance on the part of the administrator. Apnea due to overdosage has been mistaken for one due to a reflex or acapnia and proper measures to ventilate the patient were not instituted promptly.

Untoward reactions to drugs, surprisingly account for comparatively few unexpected deaths. Combinations of drugs which increase cardiac irritability may cause ventricular fibrillation. Ethyl chloride, chloroform, cyclopropane, trichlorethylene all increase cardiac irritability. When administered with epinephrine and related

sympathomimetic drugs ventricular fibrillation results. These drugs may also depress the myocardium and cause asystole. Intolerance particularly to nonvolatile substances is uncommon but accounts for some fatalities. The response is identical to overdosage. When a drug is incriminated as the cause of death it is the abuse rather than the use which is responsible. The increased use of combinations of nonvolatile anesthetics, relaxing agents and inhalation anesthetics has been blamed for the alleged mounting death rate from anesthesia.

Fatalities associated with anesthesia occur at any time, but they are most frequent during the induction or at the conclusion of anesthesia. They are less frequent during maintenance. There are various reasons for this. Vomiting and its attendant asphyxia occurs more often during induction. Asphyxial concentrations of primary agents such as nitrous oxide or ethylene are used during the induction. Obstruction develops at this time in individuals inclined to become obstructed such as the obese, spastics or asthmatics. Once the difficulties of induction are overcome and anesthesia has been established matters usually continue smoothly. Nonchalance, carelessness, or thoughtlessness are often the underlying factors responsible when complications develop during the maintenance phase. Overdosage during the maintenance phase causes death when the anesthetist is thoughtless, inattentive and is unaware of his difficulty and does not institute artificial respiration immediately.

Aspiration and obstruction are the most common causes of asphyxia in the immediate postanesthetic period. There is a tendency at this time for members of the operating team to relax their vigilance and for senior members of the surgical staff to relegate the patient to the care of less experienced persons. The thoughtless anesthetist neglects the patient to complete the chart, to arrange for details of the next anesthetic or to attend to comparatively trivial chores. The careful anesthetist remains with, and observes the patient closely until all reflexes have returned and the possibility of respiratory obstruction has passed. During the immediate postanesthetic period the anesthetist must remain with the patient until the possibility of respiratory obstruction, emesis, and circulatory collapse have passed. This is the most dangerous period and the one accompanied by the greatest number of fatalities.

These forementioned causes of death apply to general anesthesia, but regional anesthesia also has its hazards. Spinal anesthesia is ideal for many types of surgery but when misused is hazardous. Death from spinal anesthesia is caused by respiratory paralysis or circulatory collapse. Both complications appear shortly after induction of the block. Respiratory failure results. If sufficient concentrations of the drug pass into the upper thoracic and cervical portion of the spinal canal the intercostal muscles and the diaphragm are paralyzed and apnea results. If recognized and treated immediately with artificial respiration this accident is not serious. However, if overlooked and not treated promptly the circulation fails and death results from asphyxia. An attentive spinal anesthetist closely observes both the respiratory exchange and the status of the circulatory system. Of the two complications circulatory collapse causes the most deaths. The cause of the collapse has not been established. A number of factors are involved, such as pooling of the venous blood in the relaxed muscles, and loss of vasomotor tone due to the sympathetic paralysis. The severity of the circulatory disturbances increases as more dermatomes are anesthetized. Fortunately this circulatory derangement is effectively treated by vasopressor drugs. Untreated hypotension during spinal anesthesia progresses to the point of complete collapse and cardiac arrest. Pre-existing disease of the circulatory system increases the hazard of spinal anesthesia. Patients with myocardial disease, anemia, hypotension, increased intra-abdominal pressure

from ascites, large tumor masses or gaseous distention are poor subjects for spinal anesthesia because they often develop sudden severe irreversible hypotension.

There is a deep-rooted impression in the minds of many that local anesthesia is the safest and best for poor risk patients. Although generally true, shock and other complications of surgery may occur as readily during operations performed with local anesthesia as with general anesthesia.

Unfortunately some accidents occur because the anesthetist is thoughtless. The anesthetist who does not attend to the patient constantly while administering an anesthetic is a dangerous individual. Any anesthetist who walks about the operating room, gazes out of the window or leaves the room to smoke or to make a telephone call is a thoughtless one. A capable surgeon aware of the fundamentals and hazards of anesthesia expects nothing more of an anesthetist than the administration of the anesthetic. He appreciates the constant vigil of a conscientious anesthetist. Too often the anesthetist is expected to perform tasks incidental to but not related to anesthesia which take him from his patient. Such distractions have been responsible for fatalities or near fatalities. Constant attendance on the patient regardless of the type of anesthesia being administered must be practiced by responsible individuals. Such tasks as starting infusions or transfusions, shifting of lights, cranking the table are none of the anesthetist's concern and should be relegated to other members of the operating team, unsterile nurses or orderlies.

In studying operating room deaths it is remarkable how frequently the statement is made in relating the sequence of events leading to the accident "the patient was doing well but all of a sudden he stopped breathing and we could not feel the pulse." However, it is also interesting to note, upon further questioning, that significant prodromal signs were not recognized. Changes in the character of respiration and the quality of the pulse and the activity of the reflexes or in the status of the neuromuscular system, any of which are significant warnings of impending disaster to an experienced observer, were overlooked. At times failure to observe and heed these warnings is not necessarily due to thoughtlessness or neglect but rather to a lack of experience or knowledge of the science of anesthesiology. Unless one who administers anesthetics is familiar with human physiology and of the pharmacology of anesthetic drugs and how such drugs affect the patient's disease, he is merely a technician and not an anesthesiologist.

The results of cardiac massage and defibrillation are disapointing more often than not. To be successful cardiac resuscitation must be instituted without delay. Many attempts at cardiac resuscitation are successful as far as restoration of the beat is concerned but the patient ultimately dies because the circulation was interrupted too long and cerebral damage resulted. Those who survive have serious neurologic sequelae and often impaired mental processes. Valuable time is wasted listening with stethoscopes, attempting to obtain electrocardiographic tracings or injecting intracardiac epinephrine. An incision should be made between the fourth and fifth ribs on the left side as soon as one suspects the heart has stopped. The incision must not be extended too far medially towards the sternum otherwise the internal mammary vessels are cut. The ribs are spread and held apart, the heart is grasped in the hand between the thumb and other fingers and massaged as rapidly as the operator can without causing trauma to the muscle. Every 10 or 15 beats the aorta is compressed to force the blood through the coronary vessels. Too great an intrathoracic pressure must not be exerted in doing artificial respiration because it interferes with the venous return to the heart. If the myocardium is atonic 2 cc of a 0.5% solution of barium chloride may be injected into the ventricle to increase tone. Whether or not to use epinephrine is controversial because the

drug increases cardiac irritability and may precipitate ventricular fibrillation. It is indicated, however, when the heart is depressed and atonic. It should be injected into the right auricle and not the ventricle. It is not necessary to open the pericardium for massage. A less desirable method of compressing the heart is through an abdominal incision on the left side behind the diaphragm. This can be done when arrest occurs during abdominal surgery until one opens the chest.

If instead of asystole ventricular fibrillation has occurred cardiac massage is commenced and continued until a defibrillator is readied for use. Adequate blood flow to the myocardium and cerebrum is thus maintained during the period of waiting. A fibrillating heart cannot be restored to a normal rhythm by massage or drugs. The defibrillator delivers an ordinary 110 volt 60 cycle alternating current at 1½ amperes through two circular electrodes approximately 3 inches in diameter applied to each surface of the heart. The organ is shocked 3 to 7 times for one tenth of a second at two second intervals between shocks. Before the shocks are applied the heart is massaged for thirty to forty seconds in order to expel the blood from its chambers to overcome any dilatation which exists. After defibrillation it is necessary to massage the heart because asystole follows the shocks.

Neither highly specialized training nor elaborate equipment is required in emergencies involving cardiac arrest. The chance of performing the procedure on someone who might have survived without massage must be accepted. In order to be of any value and to be effective, a systolic blood pressure of at least 60 to 80 mm. Hg. should be maintained. If this pressure is not maintained, the massage is not effective and more vigorous attempts must be made.

UNEXPLAINED HYPERTROPHY OF THE HEART IN INFANTS AND CHILDREN *

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Pediatricians and pathologists have long recognized "idiopathic hypertrophy of the heart" as a rare condition causing rapidly developing heart failure in infants and children, with the only significant autopsy finding being unexplained cardiomegaly. In recent years, an entity called "endocardial fibroelastosis" has been described with increasing frequency and has been widely accepted as a distinct disease leading to cardiac enlargement and accounting for a large proportion of the cases formerly classified as "idiopathic hypertrophy". Evidence will be presented here confirming the impression of the greatly increased incidence of this condition in the past few years; but the cases studied locally have led to the conclusion that endocardial fibroelastosis does not represent a definite pathologic entity, contrary to the prevailing opinion.

In cases of idiopathic hypertrophy, reports of which go back into the medical literature of the 19th century, the hearts were usually described as showing endocardial thickening,[1,2] and in cases of fetal endocarditis, as it was called during that period, the hearts were usually described as showing marked hypertrophy.[9] Both conditions were considered to be very rare. In the early 1940's the now widely used term, endocardial fibroelastosis, replaced fetal endocarditis and from about this time articles concerned with this disease began to appear much more frequently and began to include greater numbers of cases. During this time reports and discussions of idiopathic hypertrophy became less and less common. With a few excep-

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tions[4] the papers on endocardial fibroelastosis did not indicate any clear relationship between the cases discussed and the previously described cases of idiopathic hypertrophy. Selected items from the literature of the past twenty years illustrating the trend, both in frequency and nomenclature, are summarized in Table 1.

The present study was undertaken in order to determine the local incidence of this condition, whatever its proper name might be, and to attempt to clarify the significance of endocardial fibrosis with respect to hypertrophy. The noncommittal term "unexplained enlargement of the heart" was used to refer to a heart approximately twice or greater the expected weight according to age, and showing no gross or microscopic abnormality which might reasonably account for hypertrophy such as septal defects, stenotic valves, coarctation of the aorta, myocarditis, von Gierke's disease, etc. The presence of endocardial thickening, for these purposes, was not considered an adequate cause for hypertrophy. Autopsy protocols from Charity Hospital at New Orleans on children between the ages of two weeks and two years were reviewed for several recent years and also for several one year periods one and two decades previously. The lower limit of this age group was selected because the autopsy records on infants under two weeks of age were generally not sufficiently complete for review, and the upper limit was selected because both in our experience and in the literature, the incidence of such cases is quite rare over the age of two years.

The results of a simple count of the cases found, in comparison with a count of the usual forms of congenital heart disease, are summarized in Table 2. It is seen that in the recent years, unexplained cardiac enlargement—as defined above—is found in a quite appreciable number of children dying in this age group, and in fact is approximately one-half as frequent as the other forms of congenital heart disease lumped together. This incidence agrees remarkably, insofar as comparison

TABLE 1

SUMMARY OF SELECTED REPORTS FROM THE RECENT LITERATURE CONCERNING "IDIOPATHIC HYPERTROPHY" AND "ENDOCARDIAL FIBROELASTOSIS" OF THE HEART

Year	Authors	Nomenclature	Frequency Indicated	Cases Described
1933	Kugel and Stoloff[12]	Idiopathic hypertrophy	Very rare	7
1939	Mahon[14]	Idiopathic hypertrophy with endocardial fibrosis	Rare	2
1941	Gross[9]	Fetal endocarditis	—	1
1942	Sano and Anderson[19]	Elastic tissue hyperplasia of endocardium	—	1
1943	Weinberg and Himelfarb[21]	Endocardial fibroelastosis	—	2*
1950	Prior and Wyatt[16]	Endocardial fibroelastosis	—	8
1951	Collier and Rosahn[3]	Endocardial fibroelastosis	2 out of 205 under 2 years	2
1952	Johnson[11]	Endocardial fibroelastosis	—	23
1952	Adams and Katz[1]	Endocardial fibroelastosis	—	21
1952	Blumberg and Lyon[2]	Endocardial sclerosis	Common	25
1953	Lambert, Shumway, and Terplan[13]	Endocardial fibrosis	Half other congenital heart disease	4
1953	Rosenbaum, Nadas, and Neuhauser[18]	Subendocardial sclerosis	Frequent	10
1953	Denis, Hansen, and Corpening[5]	Endocardial fibroelastosis	Common	—

* Two cases described in siblings

TABLE 2

Year	Total No. Autopsies All Ages	Autopsies in Age Group 2 wks - 2 yrs.	Congenital Heart Disease		Unexplained Cardiac Hypertrophy	
			No.	Percent	No.	Percent
1929	553	56	0	0	0	0
1940	1,367	115	2	1.7	1*	0.8
1941	1,241	103	2	1.9	1*	0.9
1942	872	72	3	4.2	0	0
1943	1,001	107	6	5.6	0	0
1949	—	36	5	14.0	3	8.0
1952-53	—	82	11	14.0	6	7.0

* Possible cases of type under discussion but not definitely proven, due to lack of sufficient data.

is possible, with the figures presented by Lambert, Shumway, and Terplan from Buffalo,[13] in which they report 15 cases of "endocardial fibrosis" to 33 cases of various forms of congenital heart disease between 1935 and 1952.

Our failure to find such numerous examples in the earlier years reviewed seems to indicate a genuine increase in the proportion of these cases coming to autopsy. It is possible that a few such abnormal hearts were overlooked in the earlier years, and this possibility cannot be completely eliminated because some of the heart weights are not recorded. However, the heart weights in cases where it was recorded did not disclose any undiagnosed cases.

The next step was to study in greater detail a series of recent cases of unexplained hypertrophy of the heart in children on which adequate clinical and pathologic data was available. Clinical charts, autopsy protocols, microscopic sections, and gross specimens and photographs were collected on a total of 14 such cases.

REVIEW OF CLINICAL RECORDS

A striking feature of the clinical histories of these children was the short duration of their acute illnesses. One out of 14 had had symptoms for a month; 9 had been ill for two to seven days, and 4 had been ill for one day or less. The most prominent symptoms were those of an upper respiratory infection, often described as a "cold", with cough, fever, and dyspnea. Many of the cases were seen in the outpatient clinic and dismissed after treatment with antibiotics, only to return within hours with a severely dyspneic and sometimes cyanotic child. At least one of the patients was dead on arrival.

Physical examination on admission usually disclosed acutely ill infants with dyspnea, fever (102° to 105°F.) and sometimes cyanosis. The heart was enlarged to physical examination and the rate was quite rapid, but no consistent murmurs were heard. There were usually rales over the lung fields. A few infants showed edema of the extremities. X-rays of the chest, when done, showed greatly enlarged hearts. Anemia of moderate degree was occasionally present but was by no means constant. White blood cell counts varied from 10,000 to 28,000 per cu. mm.

The fulminant nature of the terminal course is illustrated by the fact that most of the children died within twenty-four hours following admission. Consequently, many laboratory tests which might be of interest were not done.

Several of the articles in the recent literature have discussed the clinical signs and symptoms and the clinical aspects of the differential diagnosis quite thoroughly[5, 18, 13] and these features will not be expanded here.

REVIEW OF PATHOLOGIC FINDINGS

Some of the pertinent data on each case are summarized in Table 3. It is seen that the age incidence is fairly uniformly spread from about two to twenty-four months. No definite predilection for race or sex is apparent from this group. Since it is known that the body size varies widely in normal children at the same age, it appeared that it might be informative to relate the heart weight to body

TABLE 3
SUMMARY OF CASES OF UNEXPLAINED ENLARGEMENT OF THE HEART IN INFANTS AND CHILDREN OBSERVED AT CHARITY HOSPITAL

Age in Months	Race	Sex	Body wt. kgs.	Actual Heart wt. gms.	Heart wt. expected on basis of age gms.	$\frac{\text{Heart wt}}{\text{Body wt}} \times 100$	Thickness of endocardium lt. ventricle in microns
2 ½	C	F	—	70	23	—	125
3	C	M	5.4	74	23	1.4	100
3	W	F	5.5	65	23	1.2	150
4	C	F	5.0	45	27	0.90	150
4	C	F	5.3	66	27	1.3	140
5	W	F	3.6	60	29	1.7	250
7	C	M	—	75	34	—	300
8	C	M	7.7	70	37	0.99	50
8	W	F	7.2	116	37	1.6	200
14	C	F	13.5	125	45	0.93	210
20	C	M	13.6	163	56	1.2	280
23	C	F	15.0	126	56	0.84	100
24	C	M	13.2	124	56	0.94	250
24	C	M	—	110	56	—	25

weight in percentage terms. When this is done, it is seen that the figure varies from 0.84 to 1.7 per cent. The normal value for this figure is given as about 0.60 per cent for newborn infants, dropping to .50 per cent at two years and then to about 0.43 per cent for adult males and 0.40 per cent for adult females.[7]

The increased cardiac weight was invariably accompanied by extreme dilatation, most marked in the left ventricle. This is illustrated in Figures 1 and 2 by the globular shape of the left ventricular cavity and its large size in comparison with the ventricular walls. The myocardium was sometimes flabby but usually was of approximately normal consistency. In several hearts the outer half of the left ventricular myocardium appeared to be somewhat darker in color than the inner half. The endocardium appeared definitely thickened in the left ventricular chamber in most of the hearts, but in a few the endocardial thickening was not readily apparent in the gross specimen, as shown in Figure 2. The endocardium of the left auricle normally is thicker than that of any other chamber of the heart at all ages, but in these cases it appeared even thicker than normal. None of the hearts showed any grossly detectable endo-



Figure 2. 126 gram heart of twenty-three month old colored female (expected weight: 56 grams) showing similar dilatation and hypertrophy, but with minimal endocardial thickening.



Figure 1. 66 gram heart of four month old colored female (expected weight: 27 grams) showing marked dilatation and hypertrophy of the left ventricular chamber and moderate translucent thickening of the endocardium.

cardial thickening in the right auricle or right ventricle.

The right ventricular myocardium, although never as thick as the left, was also usually hypertrophied so that both walls appeared to be in about the same proportionate size to one another as in the normal heart. Thus, if the heart were examined by itself outside the body, and if the endocardial thickening were not prominent, the only apparent abnormality would be dilatation of the ventricles, chiefly on the left side.

The only other fairly constant gross abnormalities noted in other organs were in the lungs, which were usually heavier than normal and consolidated to varying degrees. In a few cases there were red and yellow markings accentuating the lobular pattern in the liver characteristic of chronic passive congestion.

In all cases, microscopic sections of the myocardium and endocardium were available for study and in many of the cases, sections had been taken from the left ventricle, the interventricular septum, and the right ventricle of each heart. These were prepared with hematoxylin and eosin, Verhoff's elastic tissue stain, and the periodic acid Schiff reaction. The thickness of the endocardium from the lateral wall of the left ventricle was measured with an ocular micrometer and the results are tabulated in the right hand column in Table 3. These measurements cannot be presumed to be accurate representations of the thickness in the living state, but should give a fair quantitative comparison of the endocardial thickness in the sections, all of which were subjected to approximately the same artefactual shrinkage and distortion in the process of preparation. It is readily seen that the endocardial thickening varies widely and shows no apparent correlation with either age, body weight, heart weight, or heart weight to body weight ratio.

This thickened endocardium was composed of normal appearing collagenous and elastic tissue, with very few fibroblasts and no leucocytes. The line of demarcation between it and the underlying myocardium was fairly distinct, and no evidence of necrosis, cellular infiltration, or other degenerative change could be detected in the adjacent myocardial fibers. These features correspond closely with the findings reported by other authors and are illustrated in Figures 3 and 4. A normal heart from the same age group is shown in Figure 5.

The microscopic appearance of the myocardium presented no striking abnormalities. Since the myocardial fiber increases in size from birth to adulthood, hypertrophy of the fibers is difficult to judge in children. In only 4 of the 14 hearts did there appear to be an actual increase in

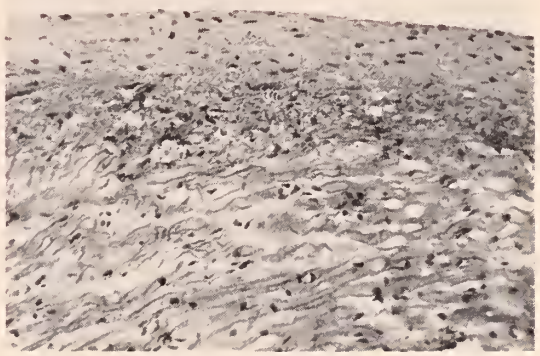


Figure 3. Eight month old white female with 116 gram heart. Section stained with hematoxylin and eosin shows endocardium of left ventricle measuring approximately 200 microns in thickness, composed of mature collagenous and elastic fibers. The underlying myocardium appears relatively normal.

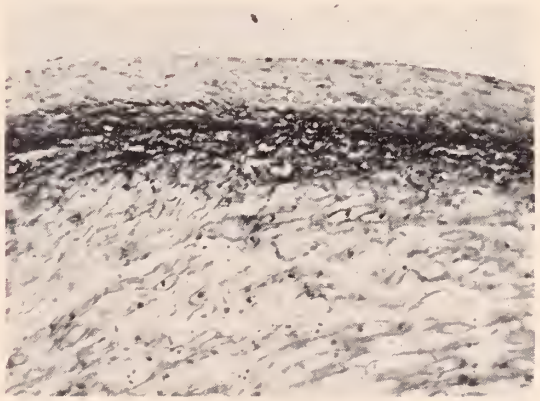


Figure 4. Same tissue as in Fig. 3, stained with Verhoff's elastic tissue stain, showing band of darkly staining elastic fibers in deeper layers of endocardium.



Figure 5. Fifteen month old colored male dying of meningitis with 58 gram heart (expected weight: 48 grams), an apparently normal heart for comparison. Section from left ventricular endocardium stained with hematoxylin and eosin shows very thin endocardium, at thickest point less than 20 microns in thickness.

the size of the fibers beyond that expected for the child's age, and in only 2 cases were there seen the nuclear changes generally associated with hypertrophy (enlargement, hyperchromatism, blunt ends). Hyperplasia is said to occur in the myocardium,[17] particularly in infants, but is even more difficult to appraise. A few sections gave the impression that there were an increased number of nuclei per unit of cross sectional area, but no counts were performed to confirm this impression. The usual appearance of the myocardium is illustrated in Figure 6.

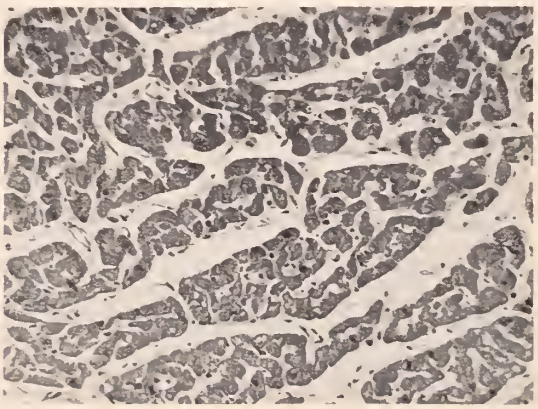


Figure 6. Twenty month old colored male with 163 gram heart (expected weight: 56 grams). Section stained with hematoxylin and eosin shows the appearance of the myocardium seen in most of the cases, with possibly slight enlargement of muscle fibers; no marked changes in nuclei, and no evidence of myocardial degeneration, fibrosis, or inflammation. The separation of the muscle bundles is probably an artefact of preparation.

A remarkable feature in all the hearts was the frequent similarity in microscopic appearance of the myocardium from both the right and left ventricles and interventricular septum, despite the consistent difference in the endocardium which was never significantly thickened in the right ventricle or right auricle. Whatever the cause of the enlargement, it seemed to affect all parts of the myocardium uniformly, although the endocardium became thickened only in the chambers on the left side.

Large blood vessels showed no abnormalities, either in the heart or in other organs. Capillaries in the outer half of the left ventricular myocardium were distended and prominent, corresponding with the darker color of this portion noted grossly. This vascular congestion in the outer portion was not noted in the right ventricle.

The most constant change in the lung was thickening of the alveolar septa chiefly due to monocytic infiltration, interpreted as interstitial pneumonia. This anatomic lesion, present in 10 of the 12 cases where sections of lung were available for review, corresponds with the symptoms of respiratory infection noted clinically. In 6 of the 12 cases there was dilatation and tortuosity of capillaries and accumulation of hemosiderin pigment in macrophages in the alveoli, changes which were considered indicative of passive congestion of the lungs.

In the liver, 4 of 12 cases showed central necrosis, also thought to be indicative of passive congestion. No other remarkable changes were noted in sections of the liver.

Several of the cases showed interesting but enigmatic changes in the kidneys. In 2 out of 12, hyperplastic tortuous arterioles were seen in the renal cortex. In 2 other kidneys there were numerous calcified casts in the renal tubules. One case showed many enormously dilated tubules, but not to the degree of a true polycystic kidney in infancy, possibly rep-

resenting an early stage in the development of adult type polycystic kidneys.

None of the other viscera for which microscopic sections were available showed any consistent changes to which any significance could be attached.

COMMENT

The above described data appear to indicate that at least two of the objectives of this preliminary study were achieved. In the first place, this entity—a respiratory infection associated with rapidly developing heart failure, death, and enlargement of the heart at autopsy—is not at all uncommon among children coming to autopsy at Charity Hospital in recent years. It is possible that the cardiac enlargement may have been overlooked in previous years, but a review of heart weights in autopsy records does not disclose any evidence that the condition occurred with a similar frequency and was overlooked. Our conclusion, therefore, is that this disease entity is responsible for an increasing proportion of deaths in this age group.

A second question—is endocardial fibroelastosis a distinct entity which has been clearly set apart from so-called idiopathic hypertrophy—we believe has also been partially answered. In this series of cases, endocardial thickening was constantly present, but the degree of thickening was extremely variable. No unexplained enlargement of the heart was found without endocardial thickening of some degree, and no sharp line of demarcation could be drawn between those cases with minimal thickening and those cases with maximum thickening. It would seem that there is some fundamental disturbance which leads to an increase in the mass of the myocardium and eventually to cardiac failure, and which also directly or indirectly causes proliferation of the endocardial connective tissues.

It is well established that endocardial fibroelastosis, indistinguishable from that seen in the cases described here and other reported cases considered typical, can be found in hearts where there is a definite structural abnormality which appears to account for the hypertrophy quite adequately. We have on hand cases of patent ductus arteriosus, coarctation of the aorta, and even von Gierke's disease which illustrate this fact.[15] At least one case of hypertension in a child was described as showing fibrous endocardial thickening.[20] In fact, one author believes that all cases of endocardial fibroelastosis are accounted for by some associated malformation which can produce endocardial anoxia.[11] Such findings, we think, support the idea that the endocardial thickening is a nonspecific response to some injury to the heart, the same injury which leads to hypertrophy.

Although cases showing endocardial fibroelastosis have been reported in stillborn, premature, and neonatal infants,[16] none have come to our attention in recent years at this hospital. As was pointed out earlier, the records kept on these infants are not sufficiently complete for review, and consequently, there is a serious gap in this study, which we are presently trying to fill. If the endocardial thickening is a nonspecific reaction to injury, it would indeed be surprising if it were not found under some conditions in the prenatal and neonatal periods, just as in the older age groups.

We feel that more attention should be focused on the altered physiology which causes the cardiac hypertrophy in these cases, and that the mysterious "fundamental disturbance" referred to above will be something of this nature rather than a genetically determined congenital defect in the endocardium. Cardiac hypertrophy is generally considered a response to increased work, but no known condition causing increased work for the heart has been demonstrated in the cases under consideration. It is incredible that anoxia, often suggested as the cause of the endocardial proliferation, could lead to such tremendous cardiac hypertrophy without itself producing striking clinical manifestations. The many defects in our basic knowledge about cardiac hypertrophy have been pointed out in a recent provocative review,[8] but at least it has been conclu-

sively demonstrated that the hearts of young animals can undergo hypertrophy very rapidly.[10, 6] A dramatic example of this was seen in the case of a two week old infant with thrombosis of the abdominal aorta and one renal artery, a lesion which had developed following birth, in which the heart was double the expected weight—the hypertrophy presumably having taken place within two weeks or less.[15] (This heart, incidentally, showed no endocardial thickening). It would not be inconceivable, therefore, that the cardiac hypertrophy found in the children we are concerned with could have developed within a relatively short period of time—that is, a few weeks. This concept would fit with the very common observation that these children grow and develop normally and to all outward appearances are normal until the onset of severe, rapidly progressive symptoms.

It is important, then, that information regarding this condition be disseminated widely in order that cases may be recognized at an early stage and studied more thoroughly by clinical methods before death. The striking cardiac enlargement observed on physical examination and x-ray examination of the chest without consistent murmurs may make it possible to identify children who survive and recover. Furthermore, it should be of considerable interest to the physician in general practice to be aware of this condition in view of its increasing incidence and especially the fulminating course and unanticipated death in many of the fatal cases.

SUMMARY

The incidence of cases of children coming to autopsy with unexplained cardiac hypertrophy and varying degrees of endocardial fibroelastosis appears to have increased markedly in recent years at Charity Hospital, and 14 of these cases have been reviewed in detail. The findings with respect to both frequency and pathologic anatomy confirm those reported in the recent literature. Attention is called to the variability of the endocardial thickening and the similarity of some of the cases with minimal thickening to what was formerly called idiopathic hypertrophy. It is concluded from a study of these cases that the endocardial proliferation is not the basic lesion and the need for studying the nature and cause of the myocardial hypertrophy is emphasized.

The salient feature of the clinical picture is enlargement of the heart on physical examination or x-ray examination of the chest. Clinical recognition is very important from the standpoint of both research and general practice.

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SURGICALLY CORRECTABLE CONGENITAL ANOMALIES ENCOUNTERED IN EARLY INFANCY: A CLINICO-PATHOLOGICAL STUDY *

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Reduction in infant mortality in the past decade is one of the triumphs of modern medicine. Many factors responsible for decline in both mortality and morbidity have been well documented elsewhere.[1] Not the least important of these has been a better general understanding of the nature of disease encountered in early infancy. Familiarity with special pathology in this age group is, in a large measure, responsible for improved diagnostic methods and better clinical management. For example, prior to 1939, the mortality rate in tracheoesophageal fistulas was 100 per cent. Today, under optimal conditions, approximately 70 per cent of these patients can be salvaged.[10, 11]

A consideration of many causes of death in the neonatal period in a large number of autopsies has been reported previously by Potter.[2] In Potter's series approximately 12 per cent of the neonatal deaths were attributable to congenital malformations. The present study is based on a group of 1557 postmortem examinations done from 1927 through 1953 on stillborn infants and infants under the age of 1 year. (Table 1) Our data are in agreement with Potter's findings.

Extrinsic and intrinsic factors responsible for the maldevelopment of the human embryo are poorly understood. The incidence of all types of congenital anomalies seen in the new born at Charity Hospital in New Orleans is 24 per 1000 live births.[3] It is known that malformations of organ systems have their beginnings early in the developmental period. By the tenth to the twelfth week following nidation the final anatomic form of the embryo has been largely achieved. However, the fetus is still subject to the modifying effects of early uterine environment.

TABLE 1

Dates	Number of Autopsies Performed on Infants Under 1 year	Serious Anomalies	Per cent with Anomalies
1947	188	23	12.2
1948	191	20	10.4
1949	194	28	14.4
1950	233	31	13.3
1951	188	33	17.6
1952	263	39	14.8
1953	320	28	8.8
TOTAL	1577	202	12.8

Reasonably specific environmental factors that are thought adversely to influence dynamic processes of early development include, infection with the rubella virus, x-radiation, and deficient diet. Local diseases of the endometrium, while occasionally responsible for early fetal death and miscarriage, probably are incapable of causing malformations in viable infants.

Anomalies in the infant attributed to maternal rubella [4] contracted during the first trimester of pregnancy include varying combinations of cataracts, deafmutism, and certain anomalies of the heart. We have encountered no proved example of this syndrome at autopsy.

Irradiation of the pregnant uterus has in some instances been followed by microcephalic mentally deficient infants. Apparently, developing nervous tissue is particularly vulnerable to radiation injury.[5, 6, 7, 17] Additional genetic hazards have been introduced following the development of atomic energy. The exposure of large segments of the population to high-energy radiation is likely to increase the number of defective individuals in future generations.[20]

Experimental evidence in lower animals [8] suggests that dietary inadequacies

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may be responsible for fetal maldevelopments. There is little direct clinical or experimental evidence to indicate what part a deficient maternal diet may play in causing anomalies in human beings, aside from endemic cretinism which is related to a lack of iodine. However, congenital malformations occur more often in infants born to diabetic mothers.[13] The developing infant is susceptible to a number of maternal diseases.[14]

The purpose of this report is to reemphasize the pathological features of a few of the more frequent anomalies that lend themselves to correction by early and intelligent surgical intervention soon after the baby is born. Although many infants have multiple anomalies (Table 2), any one of which might be lethal, a surprisingly high percentage of the malformed infants that survive for a few days have only a single major anomaly, that one being amenable to surgical correction. An examination of Table 3 will show the systems most frequently affected by single or multiple congenital anomalies in our autopsies. In approximately 25 per cent, more than one major anomaly existed at the time of death.

The data herein will be presented by systems in order to stress both the clinical and pathological aspects of the correctable anomalies that we have encountered. Patients with multiple anomalies have been arbitrarily listed under the organ-system presenting the most serious anomaly. Minor anomalies are not included in Tables 2 and 3.

TABLE 2

SUMMARY OF THE DISTRIBUTIONS OF MAJOR ANOMALIES OCCURRING IN ONE OR MORE SYSTEMS IN 202 AUTOPSIES (STILLBORNS AND INFANTS UNDER ONE YEAR)

System	Isolated Anomalies	With Associated Anomalies Involving Other Systems	Per cent with Associated Anomalies
Gastrointestinal	26	12	33
Respiratory including Diaphragm	2	6	75
Cardiovascular	49	18	27
Genito-Urinary	13	13	50
Central Nervous	18	30	63
Miscellaneous	10	5	33

TABLE 3

ALL ISOLATED AND MULTIPLE CONGENITAL ANOMALIES IN 202 AUTOPSIES BY SYSTEMS (STILLBORNS AND INFANTS UNDER ONE YEAR)

Major Systems Involved	Number of Anomalies	Per cent of the Total
Gastrointestinal	38	18.8
Respiratory and diaphragm	8	4.0
Cardiovascular	67	33.1
Genito-Urinary	27	13.4
Central Nervous	47	23.3
Miscellaneous anomalies	15	7.4
Total	202	100.0

GASTROINTESTINAL SYSTEM

Of 202 patients with congenital anomalies encountered in the entire group, 38 had major lesions in the gastrointestinal tract. Since anomalies here often cause obstruction it is obvious that diagnosis and treatment must be prompt since uncorrected intestinal obstruction is rapidly fatal. There were 8 causes of tracheoesophageal fistula, 7 of biliary atresia, 5 of stenosis or atresia of the small bowel—including duodenum — 2 of incarcerated internal hernia, 1 of malrotation with duodenal obstruction, 1 omphalocele, 1 with congenital megacolon, 1 pyloric stenosis, 2 of volvulus of midgut, 2 of Meckel's diverticulum as an isolated anomaly that caused death, 4 of meconium ileus, 1 of malrotation with volvulus of cecum, and 2 of imperforate anus. It is noteworthy that only one case of pyloric stenosis came to autopsy in the seven year period covered by this report. Within the past year alone, 21 babies with pyloric stenosis were treated by our Service without a single death.

An analysis of maternal histories failed to reveal any common factor that could be established as being causally related to these malformations of the gastrointestinal tract.

Tracheo-esophageal Fistula.—During the past fourteen years, because of better diagnosis, together with improved techniques in surgery and anesthesiology, approximately 70 per cent of patients with tracheo-esophageal fistula can be saved.[11] In order to arrive at an early diagnosis it is important to understand the anatomical peculiarities which arise from the malformation of this portion of the gastrointestinal tract. Four anatomical variants are well known. Approximately 90 per cent have a lower segment communicating with the trachea and an upper one ending as a blind sac. Bearing the relationship in mind, clinical symptoms immediately take on significance. New born infants who show excessive amounts of saliva or who become cyanotic upon attempts at feeding may have this anomaly. The diagnosis is easily established by attempting to pass a small catheter down to the stomach. The point of obstruction, if it exists, can thus be easily ascertained. Additional x-ray evidence can be obtained by instillation of 1 or 2 cc. of lipiodol through the catheter. The x-ray picture will usually indicate the level of obstruction, and may show the fistula and type of anomaly which exists. Once the diagnosis is established there should be an early attempt at therapy. Prior to surgery these patients should be hydrated and given intensive chemotherapy. Adequate amounts of blood should be slowly given during the surgical procedure. A gastrostomy facilitates postoperative care of these patients and is a safeguard against distention of the stomach with vomiting and soiling of the suture line. Among our 8 cases there were important associated cardiac anomalies in 2, in 2 cases there were atresias of the duodenum, and in another there was duodenal obstruction with malrotation. Among these 8 cases, Meckel's diverticulum was an incidental finding in 3. Prematurity also frequently contributes substantially to the risk, although only one of ours was premature. It is obvious from a consideration of the type of anomaly under discussion that early diagnosis is necessary in order to prevent the infant from aspirating food or mucus into the lower respiratory tract, resulting in extensive aspiration pneumonia. In addition, if the lower segment of the esophagus communicates with the trachea, there may be a reflux of gastric contents into the air passages resulting in a severe necrotizing type of pneumonia. These infants should be kept in a semi-upright position until the fistula is surgically closed.

In our patients necrosis was frequently found at the site of surgical anastomosis of the esophageal segment. This usually results from failure to mobilize the esophagus adequately, thus putting too much tension on the sutures. Severe mediastinitis follows leakage at such a point.

Postoperative care of these patients is extremely important and in general consists of the use of proper fluids and electrolytes, intensive chemotherapy, and a gastrostomy tube to keep the stomach decompressed for twenty-four to thirty-six hours, after which small amounts of 10 per cent glucose may be given. The beginning of oral feeding is generally possible within a week to ten days following the anastomosis. Follow-up studies of patients who have been successfully repaired reveal that stenosis at the operative site is relatively rare and is more likely to occur during the first six months, after which time the growing esophagus will enlarge enough to prevent dysphagia. Repeated respiratory infections occurring several months after the closure of a tracheo-esophageal fistula suggests the possibility that the fistulous tract may have again become patent.

Stenosis and Atresia of the Intestinal Tract.—Another group of obstructive lesions encountered in early infancy is composed of cases of stenosis and atresia of the small bowel, the most common sites being encountered in the duodenum and terminal ileum. Four cases were found in this category.

The bowel from the pylorus to the ileocecal junction goes through three stages of development. Prior to the fifth

week a lumen is present in the intestinal tract. In the rapid turn of events the intestine passes through a solid stage due to rapid proliferation of epithelium. Later, these epithelial concrescences degenerate and a lumen is reestablished by about the twelfth week. The underlying basic disturbance in atresia or stenosis of the small bowel is failure of this recanalization. In general there are two anatomical types of atresia: In one there is a veil or membrane which completely blocks the lumen; in the other, the intestine ends as a blind sac or is simply joined to a more distal segment by a fibrous cord. The proximal segment is usually found to be tremendously dilated, with a thin wall. Necrosis and perforation are apt to occur early, often on the second or third day. The distal segment is collapsed and may be no more than a few millimeters in diameter; in a small percentage, there may be multiple atresias. It is important to distinguish between atresia and stenosis. As the term implies, atresia consists in complete obliteration of the lumen; whereas stenosis is only partial in this respect. The degree of stenosis will usually be found to correlate with severity of symptoms, and therefore, the urgency for surgical intervention. With atresia, symptoms begin immediately after birth and consist of vomiting, which is usually bile-stained and varies in character with the level of obstruction. The stools may at first be grossly indistinguishable from normal meconium. However, as Farber has shown, stained normal meconium spread on a slide will contain numerous epithelial cells and occasionally lanugo hair, attesting intestinal patency. If a meconium smear shows no desquamated epithelial cells or lanugo hair the likelihood of obstruction is very high. Fever may be present and if above 102° the possibility of peritonitis following spontaneous perforation is suggested. X-rays of the abdomen even without the use of contrast media will frequently indicate the level of obstruction. Once the diagnosis is made the patient is prepared for surgery by continuous gastric suction and proper parenteral fluids. Once the abdomen is entered and the point of atresia determined, a short circuiting procedure with a side-to-side anastomosis is generally indicated rather than a direct attack on the atretic area. If the site of obstruction is in the distal ileum or colon an exteriorization procedure of the Mikulicz type with early closure of the enterostomy is the procedure of choice. However, the maintenance of fluid and electrolyte balance in these patients with enterostomy poses a problem of considerable magnitude. Since *multiple* atresias occur in a significant number, exploration of the entire small bowel for other anomalies is imperative. Associated atresia of the colon is relatively rare, and intensive inspection of this organ at the time of operation is therefore not warranted.

As to stenosis of the small bowel, approximately 50 per cent of these occur in the duodenum and 25 per cent in the ileum. Symptoms may occur later than in cases of atresia and may be of a chronic or intermittent type. The finding of milk curds in the stool of course indicates at least partial patency of the bowel. With both atresia and stenosis of the duodenum, mongolism has been an associated finding in a relatively high per cent of reported cases.[11]

Malrotation of the Intestinal Tract.—Another important cause of intestinal obstruction encountered in early infancy is malrotation of the intestinal tract. The embryological explanation for this phenomenon is concerned with the development and final position of the gut supplied by the superior mesenteric artery extending from the duodenum to the mid-portion of the transverse colon. This anomaly is characterized by lack of attachment of the mesentery to the posterior abdominal wall and incomplete rotation of the cecum, or complete rotation of the cecum which has a long mesentery. Incomplete rotation of the cecum may obstruct the duodenum by bands of reflected peritoneum or the cecum itself may be

held in such a position over the duodenum that it causes obstruction. Occasionally the entire midgut will become twisted in such a manner as to obstruct the bowel at the two extremes and to occlude the superior mesenteric vessels, giving rise to infarction. Obstruction of the duodenum by an incompletely rotated cecum and volvulus of the midgut are closely associated, and both conditions must be corrected if obstructive symptoms are to be relieved. The clinical picture in early infancy is that of high intestinal obstruction with vomiting of bile. In older children symptoms may resemble those of celiac disease or "cyclic vomiting," and gastrointestinal studies using contrast media are indicated in such patients. On opening the abdomen, volvulus of the midgut is suggested when coils of the small intestine obscure the ascending and transverse colon, especially if the serosal surface is congested. If the cecum and transverse colon lie in the right upper quadrant, obstruction of the duodenum by peritoneal reflections may be the only anomaly. In our series one such case was encountered. The correct surgical procedure has been described by Ladd.[12] This relatively simple procedure will relieve the obstruction of the duodenum and likewise will correct volvulus of the midgut, if it coexists.

Other miscellaneous conditions responsible for intestinal obstruction in the newborn are incarcerated internal hernia, meconium ileus with perforation, and rarely malformations of anus or rectum. Annular pancreas with partial obstruction of the duodenum, and reduplications of the gastrointestinal tract are rarer causes of obstructive lesions in early infancy.

Malformations of the anus and rectum are associated with other major anomalies in approximately 50 per cent of reported cases.[15] In our series, associated lethal anomalies were consistently present. It is important for the surgeon to remember that several anatomical types may be encountered. A fistulous opening between the bowel and urinary tract is common and often consists of rectovaginal fistula in the female or rectovesical fistula in the male.[16]

There was one infant with omphalocele. Omphaloceles usually require operative repair within the first few hours of birth. The two-stage procedure consisting first of skin closure with later repair of the hernia is preferred. Any abdominal viscera including the liver may be within the thin walled avascular sac. Associated anomalies such as malrotation with intestinal obstruction, occasionally are encountered and may be responsible for persistent symptoms after surgical repair.

RESPIRATORY SYSTEM

Major anomalies of the respiratory system per se were encountered relatively infrequently. There were only 8 patients who had severe anomalies involving principally the respiratory tract or the diaphragm. Of these, 4 had diaphragmatic hernia, 1 had choanal atresia, 1 had hypoplasia of the lung, 1 had stenosis of the trachea, and 1 had an aberrant lobe of the right lung with no attachment to the bronchial tree.

The most frequent single anomaly in this group was congenital hernia of the diaphragm. Within the past decade there has been a change in the method by which these patients are treated. The former approach of "allowing the patient to grow and be in better condition" resulted in a staggering mortality rate, mostly during the neonatal period. The present policy is for immediate operation, and with this approach many more of these patients can be saved. The failure of the diaphragm to develop will result in defects in any one of several areas, the most common, over the posterior lateral portion of either side and more often on the left. In about nine-tenths of these herniations no hernial sac exists. Any abdominal viscera may be herniated through the defect and lie within the thoracic cavity. Infants with diaphragmatic hernia may show early cyanosis, dyspnea, or vomiting. The severity of symptoms correlates with the degree of crowding or compression of heart and lungs. Some infants may tolerate fairly large defects with relatively few symptoms.

It is difficult to diagnose this condition by physical examination alone. X-ray examination without contrast media will usually suffice to establish the diagnosis. Once this is established an operation to repair the hernia should be performed. Associated anomalies are relatively high. One of our cases had cardiac defects, 1 had bilateral polycystic kidneys, and 1 had internal hydrocephalus. Two of our patients exhibited emphysema of the normal lung with rupture subpleural blebs and tension pneumothorax. One of these occurred in a Bloxsom-type respirator and 1 probably resulted from over-zealous attempts at manual resuscitation. Adoption of the policy of early operation regardless of the extent of herniation or the critical condition of the patient can relieve a substantial proportion of these individuals.

CARDIOVASCULAR SYSTEM

Recent advances in surgery have produced remarkable results in the correction of anomalies of the cardiovascular system. Surgical results have added emphasis to the anatomical study of all types of malformations. Less than a decade ago, physicians in all branches of medicine were satisfied with the diagnosis of congenital heart disease and at least an implied hopeless prognosis. Today, with exacting and detailed studies, the exact nature of the defect can usually be elucidated, and improving surgical skills permit an increasingly good prognosis.

A detailed consideration of the various types of congenital heart disease is beyond the scope of this present report. However, out of 202 patients with anomalies, 67 had major malformations of the heart or great vessels (Table 4). The cardiovascular system was the most frequent major system involved singly or with others in this series. Associated anomalies were mongolism in 6, cleft palate and harelip in 5, diaphragmatic hernia in 3, Meckel's diverticulum in 4, internal hydrocephalus in 2, hydro-ureters in 2, and polycystic kidneys in 2. A study of maternal histories revealed the fact that 10 of these mothers were over thirty years of age.

TABLE 4
TYPES OF MAJOR CARDIOVASCULAR ANOMALIES IN 67 CASES OF CONGENITAL HEART DISEASE

Interventricular septal defect	12
Transposition of great vessels	11
Coarctation of aorta	5
Patent ductus	5
Pulmonary stenosis or atresia	5
Cor triloculare	4
Truncus arteriosus	4
Aberrant subclavian artery	3
Tetralogy of Fallot	3
Eisenmonger complex	2
Stenosis of aortic valve	2
Tricuspid stenosis	2
Atrioventricularis communis	1
Bicuspid aortic valve	1
Dextraposition of aorta	1
Hypoplastic aorta	1
Interarterial defect	1
Vascular ring	1
Miscellaneous	3
Total	67

Transposition of the great vessels, with or without septal defects, was the most common anomaly noted. The tetralogy of Fallot or its variants was the most frequent syndrome among those with cyanosis. Among these cases, with all deaths occurring below the age of one year, anomalies were for the most part not correctable and were incompatible with life beyond early infancy.

GENITO-URINARY SYSTEM

Anomalies of the genito-urinary tract were frequently encountered. There were 27 cases in this series. Of these, polycystic kidneys were noted in 14 instances and five of these delivered by the breech. Four cases of renal agenesis were present and 3 of these delivered by the breech. Four horseshoe kidneys were found without other significant anomalies.

With polycystic kidneys or bilateral agenesis death has occurred early, and as a rule, the cause of death was not suspected clinically.

Obstructive uropathy due to congenital urethral valves or hyperplasia of the verumontanum occurred in 6 of the 14 cases of polycystic kidneys.

Associated anomalies are relatively frequent and consist of 1 serious cardiac defect, 4 club foot deformities. 1 cleft pal-

ate and harelip, 3 pulmonary hypoplasias, and 1 obstructive hydrocephalus. Accompanying polycystic disease of the liver was seen in only 1 case. Minor skeletal anomalies were relatively frequent, being observed in 7 of these 27 cases.

CENTRAL NERVOUS SYSTEM

Among these cases there was a relatively high incidence of serious anomalies involving the central nervous system. The 2 most frequent types of malformations were anencephaly and hydrocephaly. Out of the 47 cases there were 26 hydrocephalics, 14 anencephalics. 1 meningoencephalocele; 2 meningoceles, 1 craniostenosis, and 1 cirsoid aneurysm. Among the communicating types of hydrocephalus there were 3 cases with agenesis of the cerebellum. With anencephaly and hydranencephaly, hypoplasia of the adrenals occurred in 100 per cent of the cases. Hypoplasia of the thyroid, while more difficult to evaluate, occurred in 3 cases of internal hydrocephalus and 1 case of hydranencephaly. Among the noncommunicating type of hydrocephalus there were 4 with occlusion of the aqueduct of Sylvius. In 3 a horseshoe kidney was present and 1 infant had an associated megacolon. Polyhydramnios was noted in 3 of the anencephalics.

Associated anomalies occurred rather infrequently. Osteogenesis imperfecta was noted in 3; 2 had atypical hyperplasia of the fetal cortex of the adrenal, and 2 had congenital heart disease.

It is well known that surgical repair of meningoceles or meningomyeloceles may be followed by profound neurological disturbances, including paralysis of the lower extremities, or may result in the subsequent development of hydrocephalus due to the Arnold-Chiari malformation. This malformation interferes with flow of spinal fluid by jamming the brain stem into the foramen magnum, and this may cause hydrocephalus.

MISCELLANEOUS

Miscellaneous anomalies encountered were 2 osteogenesis imperfecta, 1 chondrodystrophy, 1 hypoplasia of mandible with absence of the labyrinth, 1 absence of left radius, 2 talipes equinovarus, 1 bilateral cleft palate and harelip, 1 extrophy of the heart and lungs with bilateral harelip, 1 cervical hygroma, and 1 hyperplasia of thyroid with compression of trachea. Four teratomata were observed. These are found most frequently at either end of the cerebrospinal axis. Sacrococcygeal teratomata usually lend themselves to surgical correction. Anatomically it is situated behind the rectum and anterior to the sacrum. The mass appears over the lower spine and is covered with normal skin. Most of these teratomata are benign, but may undergo malignant change, especially after the age of four months.[19] Surgical excision with due care to preserve the rectal sphincter is indicated. Occasionally it is necessary to differentiate sacrococcygeal teratomata from spina bifida with meningocele.

In this series there was 1 sacrococcygeal teratoma, 2 teratomata of the thymus, and 1 of the thyroid. One teratoma of the thymus and one teratoma of the thyroid occurred in infants born to mothers whose pregnancy was complicated by polyhydramnios. These tumors were large enough to compress the tracheal airway and result in strangulation of the infant. In an additional case, thyroid hyperplasia of a sufficient degree to compress the trachea occurred.

SUMMARY AND CONCLUSIONS

We have analyzed briefly from a study of a large group of autopsies the more important anomalies that may be encountered in early infancy. Many of these patients (23 per cent) had multiple anomalies, any one of which could have been fatal. However, in clinical practice one finds a surprisingly large number of infants with a single anomaly which might be corrected if the diagnosis is promptly made.

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FREQUENTLY UNRECOGNIZED MANIFESTATIONS OF NASAL ALLERGY

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NEW ORLEANS

Despite the fact that about 75 per cent of chronic nasal disorders have some basis in allergy, the possibility of an allergic etiology in the treatment of nasal disease is still often ignored. This is probably due, in large part, to the fact that when confronted with nasal complaints, most physicians automatically think in terms of infection. In other words, the disorder is due to infection until proven otherwise, which generally consists of successfully withstanding several varieties of antibiotic bombardment or surgical procedures.

Since this is the state of affairs with regard to localized nasal disorders, it is not surprising that the allergic etiology is even more frequently overlooked in the fringe areas, i.e., in those conditions which occur in the ears, throat, larynx, and chest but which stem from nasal allergy. The purpose of this presentation is to call attention to some disturbances in these locations in the production of which nasal allergy often plays a significant role.

CONDITIONS OR FINDINGS REFERABLE TO THE NOSE ITSELF

1. *Recurrent or persistent colds.* Most of the patients with these complaints are under the impression that they are suffering from something which they vaguely describe as "sinus". Their history is that they seem to have "one cold right after another", they seem "to live with a cold", and once they catch cold, "it seems to hang on and on". Questioning will reveal that, in most instances, these conditions are not accompanied by the constitutional symptoms which usually occur with upper respiratory infections, the nasal mucosa is pale and the mucus contains a diagnostic amount of eosinophiles. We have often found that a bacterial allergy is the explanation for symptoms which persist long after the acute stage of a cold has passed. These remarks should not be construed to mean that allergic patients do not have more true upper respiratory infections than those without allergy; what we mean is that upper respiratory allergic crises are often mistaken for infection.

2. *"The allergic salute"*, frequent "hawking", or clearing of the nose and "sniffing". The "allergic salute" is the descriptive term often applied to a gesture frequently used by allergic children. This consists of a frequent rubbing of the tip of the nose with the hands because of the itching due to allergy. We have had to assure a number of mothers that this was not a sign of a parasitic infestation. Undoubtedly, everyone has had the misfortune to sit next to someone in a movie

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or in church who was constantly "hawking" or pulling the mucus from his nose back into the nasopharynx and frequently expectorating into a handkerchief or tissue. These individuals do this so much that they usually equip themselves with several handkerchiefs each morning to handle the tremendous amount of mucus they obtain over the period of a day. When examined, these secretions are usually clear and do not contain much more than eosinophiles. In some patients the production of mucus is not so pronounced and the blockage is predominant; these people "sniff" frequently without expectorating.

3. *The adenoid facies.* This is purposefully mentioned before the problem of enlarged adenoids is considered because the typical long face and tendency to mouth breathing may occur as a result of chronic nasal blockage as well as because of enlarged adenoids.

4. *Nasal polyps.* Practically everyone knows that most cases of nasal polyposis are due to allergy and the condition is often very easy to diagnose. In some instances of nasal blockage, however, polyps occurring in portions of the superior meatus or in the posterior third or half of the nose may be overlooked unless thorough shrinkage of the nasal mucosa is carried out.

5. *Ethmoiditis.* It is not unusual to encounter a low grade ethmoid infection accompanying allergic rhinitis. Quite often this infection will defy all efforts made to control the allergy and dramatic relief ensues when the ethmoiditis is treated. This is mentioned here because the condition is often present in spite of negative x-rays.

6. *Headaches.* Recurrent headaches are frequently of allergic origin. Our observations indicate that they occur most often in individuals who have associated deviations of the nasal septum causing impaction, or in those cases whose turbinates are impacted against the lateral wall of the nose. Diagnosis can be established rather easily by field block anesthesia if the patient is seen while suffering with the headache. They can be controlled either by proper allergic management or by indicated surgical procedures; the latter will not, of course, cure the allergy but the allergic edema will be able to be accomodated without setting up a pain reflex.

7. *Enlarged adenoids.* As is well known, lymphoid hyperplasia and the allergic diathesis go hand in hand. What is frequently overlooked is the fact that there may be a "regrowth" of tissue following adenoidectomy if nasal allergy is uncontrolled. There is another reason to keep this phenomenon in mind. Hyperplastic changes may have become so pronounced that even though some recession may follow allergic control the remaining tissue still may be large enough to cause nasopharyngeal blockage and make the allergic management of the patient appear to be unsatisfactory.

CONDITIONS OR FINDINGS REFERABLE TO THE EAR

1. *Secretory otitis.* This entity occurs more frequently than is generally thought. It consists of the presence of nonpurulent secretion in the middle ear cavity and is due to Eustachian tube blockage, due either to enlarged adenoids or edema of the walls of the tube. It results in varying degrees of conductive hearing loss and sometimes tinnitus and/or vertigo. If untreated, organization of the serous material may ensue and lead to irreversible loss of hearing.

2. *Recurrent ear pain.* It is not unusual to encounter patients who complain of intermittent attacks of ear pain of short duration. These attacks are generally due to short periods of Eustachian tube blockage and respond nicely to the use of antihistaminics and nose drops in the Parkinson position. If refractive to this therapy, allergic management is indicated.

3. *Persistent drainage of the ear.* Persistent drainage following tympanotomy or spontaneous rupture of the tympanic membrane in otitis media should cause one to consider the presence of a nasal or Eustachian tube allergy. The secretions are either mucopurulent or entirely mucoid. It is not enough to treat the infec-

tion in these cases; the primary allergy should also receive attention and this approach is sometimes rewarded with quick success in cases which have been refractory prior to the institution of allergic management.

4. *Recurrent otitis media.* There are a number of factors of importance in the production of otitis media. However, it has been our experience that many of the individuals who have recurrent attacks of this condition have a nasal allergy. As a result of nasal blockage due to the allergy and sometimes enlargement of the adenoids, there is stagnation of the secretion in the nasal passage, infection travels along the Eustachian tube and the otitis media develops. There is often an accompanying ethmoiditis.

5., 6. and 7. *Hearing loss, vertigo and tinnitus.* As intimated previously nasal allergy may cause hearing loss as a result of either hyperplasia of the nasopharyngeal lymphoid elements or as a result of involvement of the Eustachian tubes in the allergic process. In each instance the condition is reversible provided tissue changes have not proceeded too far. Nasal allergy may cause vertigo and tinnitus by the same mechanism.

8. *Speech difficulties in children.* Because we first learn speech by virtue of hearing it spoken it is evident that certain speech disorders in children are due to the fact that they have a hearing loss. As mentioned above, allergy may be the cause of hearing loss and so indirectly of speech disorders.

CONDITIONS REFERABLE TO THE THROAT

1. *Recurrent sore throat* (particularly in the morning). There is one type of sore throat which occurs very frequently in allergic patients. They complain of recurrent sore throat which is present on awakening in the morning but which disappears as the day progresses. Sometimes the soreness returns when evening falls. Quite often a history is given of the necessity for expectoration of a large amount of mucoid material shortly after arising. The sore throat is due to the fact that these individuals suffer with nasal blockage while sleeping and so breathe with their mouths open all night. This dries the membranes of the mouth and pharynx and gives rise to the soreness. After awakening the mucus again begins to flow down from the nose into the pharynx and the latter is lubricated, as it were; this is the reason the sore throat disappears as the day wears on.

2. *Postnasal discharge.* The patient becomes aware of the mucus travelling down from the nose into the throat when it is excessive in amount or when it is too viscid. In the case of allergy, of course, excessive production is the explanation. It is well to consider allergy as an etiologic factor in the production of postnasal discharge because too often an infected sinus is indicated.

3. *Lymphoid accumulations in the oropharynx.* The discrete lymph follicles on the posterior pharyngeal wall and the lateral accumulations known as the lateral pharyngeal bands are more often than not an indication of the presence of a nasal allergy. In addition to being characteristic of the allergic constitution, they seem particularly large when there is an allergic postnasal discharge, as though they might be in response to it.

4. *Morning clearing of the nose and throat.* This is quite a common complaint of those suffering from nasal allergy. Some of these individuals make such strenuous efforts to rid themselves of their secretions that they become nauseated and even actually vomit. The annoying secretions probably are of two types and stem from two sources. First, there are those which pool in the nasopharynx overnight. Then there are the viscid pharyngeal secretions which result from mouth breathing.

CONDITIONS REFERABLE TO THE LARYNX

1. *Frequent clearing of the vocal cords.* The accumulation of secretions in the hypopharynx as a result of nasal allergy often serves to irritate the superior laryngeal nerves, the so-called "watch dogs of the larynx". The patient often responds

to this by constantly "clearing his throat." What he should really do is swallow the secretions.

2. *Hoarseness.* When the clearing of the vocal cords mentioned above continues for a long enough time the vocal cords become edematous and thickened. The result is various degrees of hoarseness.

3. *Vocal nodules.* In some instances the constant trauma to the vocal cords results in the formation of angiomatous polyps on the cords. These are commonly known as vocal nodules.

4. *Voice aberrations.* Should the trauma continue long enough the individual may try to overcome the vocal cord abnormality by speaking in a register which is either too high or too low. This often results in laryngeal strain and fatigue.

CONDITIONS REFERABLE TO THE CHEST

1. *Cough.* Though cough is most often thought of as an indication of a chest disorder there is one type which is often associated with the postnasal discharge nasal allergy. This is a "dry" or "tight" type cough. It may be present during the day but one of its characteristics is that it more often begins as soon as the patient retires. They frequently complain that it is due to an itching or tickling in the throat. Apparently here too superior laryngeal irritation is one mechanism in the production of this type of cough.

2. *"Asthmatic bronchitis."* This is enclosed in quotation marks because some object to the nomenclature. The symptoms are obviously due to the passage of air over mucus in the hypopharynx, larynx, and trachea. Undoubtedly some of the mucus originates in the nose but some must also be produced locally in the trachea. It is mentioned in connection with nasal allergy because the symptoms will often be dramatically relieved by displacement lavage of the ethmoids when there is superimposed infection.

GENERAL CONDITIONS REFERABLE TO NASAL ALLERGY

1. *Irritability.* Most individuals with nasal allergy will declare that when there is blockage of the nasal passages due to an allergic crisis they are more irritable than usual. This would not seem difficult to understand if we but recall our own emotions when our heads are blocked as a result of acute coryza.

2. *Behavior problems.* Behavior problems in children may stem indirectly from a nasal allergy, particularly if the hearing is involved. The mechanism is not difficult to understand. These hard of hearing children feel left out of things and often have difficulty in understanding and so may not keep up with others in school work. Sometimes they are actually thought dull. As a result they attempt to compensate by calling attention to themselves. Unfortunately in so doing they often run afoul of the behavior code.

3. *Tiredness.* Allergic patients, including nasal allergics, claim that they fatigue more easily than do other patients. This is not surprising as allergy implies anoxia and it is well known that the anoxic organism does not work with the same efficiency and tires much easier than the normal one.

SUMMARY

1. A number of conditions often found in conjunction with nasal allergy are briefly discussed.

2. The mode of action of these conditions is discussed.

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OCULAR MANIFESTATIONS OF VASCULAR DISEASE *

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NEW ORLEANS

Perhaps the quickest, easiest, and most valuable procedure that we have at our disposal for evaluating the general status of a patient's vascular tree is ophthalmoscopy—and yet, it is often amazing that so little advantage is taken of this diagnostic technique. Nowhere else in the body are vessels and vascular changes so amenable to direct observation. Unfortunately

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however, over the years, many—perhaps too many—classifications of eyeground changes have accumulated and come to clutter up the literature. Contradictory observations and lack of objectivity in the organization of many of these classifications have served only to confuse the basic issue of understanding and interpreting pathologic processes. As with the grain of truth, there is, however, something to be said in favor of most retinopathy classifications—in some, simplicity and practical usefulness—in others, completeness—even if to the point of bulkiness and over classification. A defect which limits any such method of examination and classification is reliance upon visual memory—the human factor—and this cannot be eliminated.

In recent years, cognizance has been taken of the fact that the eyeground is not a thing apart from the rest of the body. Retinal vascular changes have been objectively integrated into the general medical, vascular and pathologic picture.[1-3] As a result, we have now classifications which are simple, workable, and most importantly, clinically useful.

Out of the many attempts to categorize fundus changes and pictures have evolved a number of important concepts. First, a close relationship between eyeground findings and pathologic changes both in the eye and elsewhere in the body has been established. As a result of this, correlation between ocular and systemic physiopathology can be recognized. Clinical ocular changes have come to be accepted as a reflection and a part of similar processes elsewhere in the body. We can say, upon fundus examination, that this patient has hypertension alone, or that one has diabetes without sclerosis, or another is undergoing sclerotic changes — and estimate the severity,[4, 5] duration [6] and prognosis [7, 8] in many cases.

Fundamentally, the vascular changes seen in the fundus of the vascular patient —and here we are also considering the diabetic patient — are relatively few in number. For all practical purposes there are but three parts of the vascular tree—the arterial limb, the capillary bed, and the venous limb. In the fundus, of course, only the peripheral portion of the tree is seen—the arterioles, capillaries and venules. It is in this portion of the vascular system that pathologic changes occur earliest, and therefore, here that one should look first. Bell [9] has recognized six types of arteriosclerosis. These include regenerative arterial thickening, elastic intimal thickening, intimal atherosclerosis, arteriolosclerosis, senile ectasia and the medial sclerosis of Monckeberg. Of these six, the first four occur in the eye, three in the central retinal artery and its main branches, and the fourth after the second bifurcation of the central retinal artery. The central retinal artery becomes arteriolar after its second bifurcation when it loses its internal elastic lamina and muscular coat. This is a pathologic classification, however, and only parts of it are useful clinically, since the line of distinction between the different classes is sometimes rather finely drawn.

HYPERTENSION

Hypertension is essentially a dynamic physiopathologic process rather, at least in its beginning—than a static anatomic one. The changes in the eyeground that one might expect to see would therefore vary with the degree of hypertension on the basis of time—from moment to moment. An abrupt increase in blood pressure, such as occurs in toxemia of pregnancy, is accompanied by characteristic retinal changes.[10] A sudden fall in blood pressure of these patients is followed by a return to normalcy provided the hypertensive state has not persisted for any length of time. The fundus is completely normal with no residua or sequaelae. These changes then, are transitory—transient narrowing of the arterioles, transient hemorrhages and transient papilloedema. The constricted or spastic segments of the retinal arterioles may be seen moving along the blood column—or may disappear as a result of relaxation of vessel wall. Should the pressure be very high, and the

vessel wall not be able to withstand this trauma, the wall is damaged, leaks—and hemorrhages are seen. These hemorrhages assume the well known flame shape, because they occur in the nerve fibre layer of the retina and the blood following the path of least resistance spreads out along the course of these fibers. Should the hemorrhages occur deeply in the retina, they tend to be more rounded in shape. Finally, if the blood pressure is very high, and remains so for any length of time, "exudates" make their appearance. Fresh exudates, the so-called "cotton wool patches," represent focal areas of retinal degeneration or ganglioform degeneration and accumulations of fibrin. The hard shiny exudates of long standing hypertensive disease are composed of lipid deposits. The most severe form of hypertension—malignant hypertension — is accompanied by swelling of the optic nerve head or papilloedema in addition to the above findings.

This material then provides the basis for a scheme of classifying hypertensive retinopathy. Scheie,[11] simplifying and condensing and making more universally workable the Keith-Wagener and Wagener-Clay-Gipner [12] classifications, has proposed the following grouping of hypertensive retinopathies.

Grade I: Mild hypertensives, who present just recognizable vessel narrowing or spasm.

Grade II: Pronounced narrowing of the vessel with localized irregularities, indicating focal spasm.

Grade III: Extreme narrowing and irregularity with edema or edema residues.

Grade IV: All of the findings of grade three plus papilloedema.

This classification correlates well with the severity of the hypertension. Another scheme is used to estimate vascular damage and duration through the evaluation of accompanying sclerotic changes.

VASCULAR SCLEROSIS

The relationship between hypertension and vascular sclerosis is not clearly understood, although a close connection must certainly exist. Young patients with essential hypertension of long standing do develop retinal, renal, cerebral and coronary vascular disease much earlier than do nonhypertensives of the same age. Heredity, age, and lipid metabolism are important in the long term development of vascular degeneration, but blood pressure levels apparently play a dominant role in the relatively short term picture. Certainly, arteriosclerosis is aggravated and accelerated by the presence of hypertension. As hypertensive vascular spasm persists, regardless of whether the spasm is on a neural or humoral basis, hyaline deposits and lipid material is laid down just outside the arteriolar endothelium. This then is responsible for thickening and eventual opacification of the arteriolar wall. This process tends to be diffuse in distribution in contrast to atherosclerosis which is prone to develop as focal subintimal plaques—in true arteries.

The diagnosis of atherosclerosis can be made in the fundus only if the central retinal artery or its first two branches are involved. In such cases the vessel wall presents focal areas of opacification with localized narrowing of the blood stream. More often, atherosclerosis is diagnosed by implication—a vascular accident involving the central retinal or some other branch of the internal carotid artery. Occlusive phenomena of the central retinal artery, or the vein as a result of pressure by the artery is a dramatic event, and the diagnosis is not likely to be easily missed.

Arteriolosclerosis and capillary sclerosis are for all practical purposes the only general degenerative vascular process that can be seen ophthalmoscopically. The central retinal artery has become an arteriole after its first or second bifurcation, and the other five forms of senile sclerosis mentioned by Bell occur only in true arteries.

Arteriolosclerosis is a diffuse affair in contrast to atherosclerosis which tends to be spotty in distribution. In the fundus, simple arteriolosclerosis is manifest by changes which are fairly characteristic:

As the vessel wall becomes thickened and more opaque, the light from an ophthalmoscope, incident upon its surface is more completely reflected—and the light streak becomes broader. Eventually, the streak covers the entire surface of the vessel which then has a copper wire appearance. The blood column is partially obscured by the semi-opaque vessel wall. Finally the vessel wall becomes completely opaque by further hyaline and lipid deposition, and the vessel assumes the well known silver wire appearance. Blood, though not seen, may still course through the lumen of such a vessel.

The second group of ophthalmoscopically characteristic changes of arteriolosclerosis occur at the arteriovenous crossings. To understand these changes, one must remember that the artery lies on the vein, the arterial wall is considerably thicker than the venular wall and that the two vessels as they cross, share a common adventitial sheath. Normally, no pressure is exerted by the artery on the vein, and venous return is unimpeded. As the arteriolar wall becomes thicker and more rigid, it compresses or indents the underlying venule, giving rise to the commonest change seen ophthalmoscopically. Extension of the sclerosis to the common adventitial sheath causes the blood column in the vein on either side of the crossing to be partially obscured, and the vein at these points appears "tapered." If the blood flow is appreciably impaired, the vein distal to the crossing may become distended. This is spoken of as "banking of the vein," or Gunn's sign.

The third manifestation of arteriolosclerosis is increasing vascular tortuosity. Retinal vessels, especially the veins, may normally be rather tortuous, so this finding alone is not significant. Hemorrhages and exudates are not usually a part of the picture of simple arteriolosclerosis—in the absence of hypertension, unless a complete or branch venous obstruction has occurred.

The classification of arteriolosclerosis which has been suggested by Sheie is based primarily upon light reflex changes rather than the events that occur at the arteriovenous crossing. This classification is, however, simple, accurate, and easy to use.

Grade I arteriolosclerosis is present if there is a just recognizable increase in the breadth of the light reflex associated with minimal arteriovenous compression.

Grade II is diagnosed if the findings of Grade I are more marked.

Grade III is present if the arterioles have a burnished copper wire appearance and marked arteriovenous compression.

Grade IV is indicated by the presence of silver wire arteries.

Obviously, any combination of the various degrees of hypertension and arteriolosclerotic retinopathy can occur simultaneously, but each can be separately graded.

DIABETES

Diabetic retinopathy is included in this discussion for two reasons: First, the diabetic retinal changes are exclusively vascular, and second, because of the increasing incidence and importance of this clinical picture. The degenerative complications of diabetes are increasing because of the increased life expectancy among diabetics since the advent of insulin. This is particularly true in the case of young diabetics, whose disease usually takes a more severe form. The fairly recent work of Ballantyne,[13] Ashton [14] and Friedenwald [15] have wrought rather radical changes in the medical world's concept of diabetic retinopathy. All of the medical texts prior to 1950 describe the characteristic fundus changes of diabetes as consisting of small punctate hemorrhages, exudates and, if the diabetes was of moderate duration—arteriosclerosis. The ophthalmoscopic picture is characteristic—but the characters have been misnamed. It is now known that the so-called petechial hemorrhages are not hemorrhages at all, but in reality, minute aneurysms of the capillary wall on the venous side of the capillary bed. These aneurysms average 20 to 30 micra in diameter, and, being at the very limit of ophthalmoscopic visibility, are very prone to be missed in a casual

fundus study. They appear as small dark red pin-point structures bulging from the capillary wall, and lie at the point of bifurcation of the capillary in the saddle between the two branches or on the outer convex surface of a sharp capillary bend. These globular masses lie immediately adjacent to the capillary and are not connected by a stalk. The most important clinical feature of these aneurysms, and one that facilitates differentiating them from true petechial hemorrhages lies in the fact that they remain present for weeks, months, or longer. Retinal hemorrhages can and do absorb in a matter of days. It is extremely difficult to remember or to describe in words the exact location of these lesions for the purpose of recording course and change. A graphic or diagrammatic sketch of the fundus showing the number and location of these aneurysms is highly advisable, and is the most accurate method of keeping track of the ophthalmoscopic picture.

As these aneurysms grow older, their walls gradually become hyalinized and thickened, and eventually, the blood which they contain becomes obscured, and only the white or waxy wall is seen with the ophthalmoscope. The aneurysm has then become an exudate.

The newly recognized aneurysms and exudates are typically found in the posterior temporal portion of the fundus, especially around the macular region. As the exudates increase in number surrounding the macular area, they form a ring, and present the picture of circinate retinitis.

The larger veins of the retina in diabetes become more full, and have the appearance of swollen sausages. The late picture of diabetes consists of extensive hemorrhages, massive exudation, new vessel formation, and the so-called retinitis proliferans. Daeschner, Disher and Hartman [16] have presented the following quantitative classification of diabetic retinopathy:

Grade I: 1 to 20 microaneurysms and/or 1 to 10 exudates per fundus.

Grade II: Moderate retinopathy: 20 or more aneurysms, the presence of retinal hemorrhages and/or 10 or more exudates per fundus.

Grade III: Advanced retinopathy: The findings of Grade II plus the presence of new capillaries, retinitis proliferans and its complications.

Lipemia retinalis is sometimes a part of the picture of diabetes in young individuals whose blood lipoid content rises to 4 or 5 per cent.[17, 18] These diabetics are usually poorly controlled. The retinal vessels have a creamy appearance, and it may be difficult to differentiate the arterioles from the venules on the basis of their color.

A most important point to remember in evaluating the fundus of a diabetic is that the retinopathy is a much more important index of the duration of the disease than of its severity. No diabetic is ever quite perfectly controlled. Normalization of the blood sugar level with insulin does not necessarily mean normalization of the patient, because of the antagonistic relationship between the pancreas and the pituitary gland. Patients with apparently stabilized diabetes—normal routine urinalyses, weight stabilization and so forth, very frequently develop retinopathy as they grow older.

In conclusion, I should like to re-emphasize the usefulness and value of careful ophthalmoscopic examinations, and their importance in assessing general vascular pathology. The duration and amount of damage produced by hypertension can be fairly accurately determined ophthalmoscopically. The degree of arteriolar sclerosis in the retinal vessels mirrors renal damage of a similar type. Estimation of the duration of a diabetic state can be made with reasonable certainty through ophthalmoscopy.

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PSYCHIATRIC EMERGENCIES IN GENERAL PRACTICE *

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INTRODUCTION

It is generally recognized that psychiatric emergencies do occasionally arise in the field of general medical practice. The frequency of such emergencies and their nature is not so clearly understood. Often the general practitioner thinks of a psychiatric emergency as being represented by an acutely excited patient, who requires immediate commitment to a mental hospital. Such patients constitute a very small percentage of the individuals coming under the category to be covered in this paper since such emergencies arise in all psychiatric categories. We see emergencies arising in the psychoneuroses, in the psychoses, in the personality pattern disorders (the psychopath), in epileptics, in constitutional defect states (the feeble-minded), and there are even psychiatric emergencies in the field of psychosomatic disorders. The early recognition of these conditions is vital if prolonged morbidity or even death is to be avoided.

A thumbnail sketch of a number of patients representative of the categories mentioned may be the most effective method of developing this theme. Since the general practitioner may wonder how a psychiatric emergency can occur in the field of the psychoneuroses, the following case can be cited as an example.

PSYCHONEUROSES

An active, competent, 39 year old physician practiced in a small city. He was interested in church and civic affairs and was looked upon as a respectable, exemplary citizen. One morning about four, he awoke with a sense of impending disaster accompanied by pain at the apex of the heart, palpitation, marked tachycardia, shortness of breath followed by nausea and diarrhea, cold clammy extremities, and an all-gone feeling. A coronary occlusion was suspected. The usual immediate treatment was given. The next morning an electrocardiogram was made, which proved to be normal. Later that day the patient had a similar but milder episode. These were the first of numerous similar attacks so that soon the patient became convinced that he had some type of organic heart disease. Over a period of time numerous electrocardiograms were made all with normal tracings. He soon became a "cardiac cripple".

The patient's local physician, a friend, considered the possibility of an emotional disturbance and had inquired as to whether or not he had been under any special strain or was worried about anything. This the patient vehemently denied, insisting that he had nothing to worry about. He pointed out that at the onset of his

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illness he had just returned from a month's vacation with his wife and family and that he had never been so happy or rested. He was sure that there could not be anything in his life that could account for his trouble. Furthermore, his first attack had occurred during the night and he had been awakened by the symptoms. Ultimately, he consulted a prominent heart specialist, who, in spite of the patient's denial of emotional conflicts, decided that the psychiatric aspects of the problem should be investigated. When seen in consultation, the patient appeared to be tense, anxious, and seemed somewhat evasive. He gave a routine history and again protested that he had no troubles other than those incident to his illness. Suspecting that there must be some conflictual material which he was not willing to reveal, a second interview was arranged, and this time the significant facts were revealed. In short, the patient was married to a rigid, frigid wife, who was a member of the WTCU, and who would not permit him to take even a drink of beer. On the surface she was the loving wife, the devoted mother of their two children, and the excellent housekeeper. Actually, she lacked real warmth and was emotionally unrelated. In due time the patient developed a friendship with a young woman who became his mistress. The affair advanced to the point where something had to be done. He felt that he had either to break up his house or break off the affair. He chose the latter course. The woman moved to another city and he took a vacation with his family. He felt virtuous, but frustrated. Upon return home he received a letter from the girl in question telling him that she was going to visit their home town for a few days. Would he see her again? It was at 4:00 the next morning that he awoke with his first anxiety attack.

Can this be considered a psychiatric emergency? Yes, because this man was rapidly becoming a chronic, confirmed "cardiac cripple" on the basis of an "organ neurosis." He had had months of partial disability. The underlying and most significant ideological factors in his case had not been unearthed nor had they been dealt with in any fashion. This was not entirely the fault of the family doctor. He had inquired about emotional difficulties, but he was too close to the patient. We often speak about the tremendous value of that intimate relationship between family doctor and family, but sometimes it is too close. Sometimes it blocks communication so that the patient must go elsewhere, must go to another city, must go to a consultant, who does not belong to the same country club, who does not attend the same church, who does not go to the same Kiwanis Club meeting. The patient often cannot communicate comfortably with the person who is too closely associated with him but he must communicate to get well, so this is a medical emergency.

There are other psychiatric emergencies in the field of the psychoneuroses. For example, a 26 year old young woman suddenly developed a state of panic while walking along a street. She had to rush home and thereafter could not leave the house unaccompanied. In addition, she developed a wealth of psychosomatic complaints including gastrointestinal disturbances, cardiac arrhythmias, and other symptoms which her family physician recognized as being due to "nervousness". He tried to work out the problem but he could not quite get to the root of the situation. After more than two years of disability she was referred for treatment of the emotional aspects of the illness. It was found that the patient had strong dependency needs linked with great hostility and guilt, a triad which is present in the background of most emotional problems. It was significant that the patient's first state of panic occurred while walking on the street with her mother-in-law, whom she hated. The mother-in-law had been goading her into an activity she detested so that the hostility which she feared reached the boiling point and panic ensued.

After a period of psychotherapy, the patient began to be able to verbalize her feelings. On one occasion during an interview, she suddenly got up from her chair, left the room and did not return for about fifteen minutes, then stating "I feel so much better". When an inquiry was made as to the reasons for her behavior, she explained that she had gone to a telephone, called her mother-in-law, told her to go to hell, to get out of her house and that she never wished to see her again. For the first time this young woman was able to express overt aggression and feel safe in doing so. The patient recovered. She was not as sweet a person after treatment as before but a much healthier one. Had the first panic state been looked upon as a psychiatric emergency in this case, several years of morbidity could have been avoided.

Emergencies, of course, are seen in the psychotic reactions. The acutely, excited, assaultive, threatening patient must be cared for. But less obvious reactions are also emergencies that are sometimes overlooked. As an example—a young married woman rudely awakened her husband one night by striking him vigorously over the head with a shoe. She was unable to give any satisfactory explanation for this and merely said that she must have done it in her sleep. The episode was dismissed as without significance at the time. A short time later she seriously beat her two year old child, attacked her mother with a lethal weapon and destroyed considerable property. Such impulsive behavior as the first episode occurring without provocation must never be ignored. If tragedies are to be avoided, such cases must be considered psychiatric emergencies.

There is increasing evidence that unless emotional disturbances are treated at an early stage, a neurophysiological pattern may be established which becomes increasingly difficult to eradicate. Instead of weeks of therapy, months and years of treatment may be required. The neurophysiologists are now speaking about reverberating circuits and feedback mechanisms in the central nervous system indicating that their establishment may account for perpetration of neurotic patterns of behavior. As time goes on, weaker and weaker stimuli may set the reaction in motion.

AFFECTIVE OR MOOD REACTIONS

In the group of so-called affective or mood reactions, problem cases frequently arise. Once a 20 year old boy who for some time had been depressed and retarded, burst into my office and announced that he had only twenty minutes to give me. He had hired a taxi cab for the day to expedite a full itinerary. He had planned to have an interview with the Dean of a medical school to apply for admission. Following that he expected to enroll in a famous institute of music, then anticipated renting a hotel room with a piano so that he could practice all night in preparation for an audition in New York. The family doctor was called and informed of the emergency. It was suggested that the boy would soon run out of funds and could be apprehended when he failed to pay the taxi bill thus providing a convenient method for hospitalization. In a little while the family doctor got in touch with me to report that the relatives were indignant and would not consider following my suggestions because it seemed to them that the patient had not been as well or in such good spirits in months. They even indicated that they considered the psychiatrist a bit crazy. As for the patient, he did most of the things that he said he was going to do. Obviously he was not very successful in enrolling in the educational institutions but he did practice on the piano all night, he did go to New York, and he did have an audition. However, by that time he had become so excited, he was picked up by the police and sent to the Bellevue Hospital. Much trouble and expense might have been avoided had we been foresighted enough to have considered this case an emergency and to have informed the family in advance regarding the possible course of events. It might be appropriate

to mention here that in the field of mental illness, we are still met with the age-old problem of hostility and shame felt by relatives, the public, the patient and even at times, the physician. For this reason there is a strong tendency to ignore or be blind to the obvious.

DEPRESSIVE STATES

Depressive states also create emergencies. Suicide is always a possibility. Too often threats of self-destruction are ignored. On the other hand they are sometimes overstressed. Only about one in ten suicidal attempts succeed and most of the others were intended to fail. Suicide, or the threat of self-destruction, is a hostile act directed against both self, and more often, others. An individual can punish the erring spouse, the rejecting mother, the authoritarian father by saying you do not appreciate me. I will die. Look what you have done to me. This is well expressed in a little ditty:

"You're always, always picking on me
You never, never let me be.
I know what I'll do by and by
I'll eat some worms and then I'll die
And when I'm dead, you wait and see
You'll all be sorry that you picked on me."

Not so long ago we had a wonderful prophylaxis for suicide. It was tincture of iodine and there was a bottle on every bathroom shelf. The bottle was marked with a skull and crossbones and the word "poison" printed beneath. The individual who impulsively wanted to commit suicide or thought he did rushed to the bathroom shelf and swallowed the contents of the bottle of iodine. Much was accomplished by this act. Everybody concerned was frightened and punished, aggression was acted out, guilt appeased and little harm done. At most the individual had a sore mouth and throat and there was at times vomiting and retching but the secondary gain was great. The individual was rushed to the hospital, given much attention, everybody involved was sorry and a reconciliation ensued. Unfortunately, iodine has lost its popularity and the more lethal barbiturates are the weapons of choice.

Nevertheless, it must be kept in mind that depressions with serious suicidal tendencies do not occur just in people who have psychotic depressive reactions. They occur in the neurotic who has failed, in the old person who is coming down the ladder, in the alcoholic after a binge.

Depressive episodes incident to the climacteric depressions are well known. Suicide also occurs in early schizophrenic patients, particularly in adolescence, when some insight is present and when the patient realizes with dread that he is losing his grip on reality. These are cases in which early treatment is most essential.

Suicide occurs in organic reactions where there is a threat to the physical and mental integrity of the individual. Head injury with memory loss is often too much for a person to bear. Old age has its contingency of suicides. A spouse dies. A symbiotic emotional relationship has broken up or the individual sees that he is losing his intellectual powers and he has lost the joy of productivity. The depressions of old age are not primarily organic in nature. They are psychological depressions incident to problems of adaptation. Threats of suicide in the aged are real psychiatric emergencies. Many old people respond promptly to electroshock therapy.

In psychopathic personalities with weak egos and strong instinctual drives which are not well held in check, serious problems frequently arise quite suddenly. Such persons cannot stand frustrations, may on slight provocation develop rage reactions, or when inhibitions are released by alcohol or barbiturates, a dangerous furor may ensue. Furor is also seen in epileptics. Such an individual is exceedingly dangerous.

PARANOID

One other psychiatric emergency that should be mentioned is the dangerous paranoid patient. This is more an emergency for the physician than for the patient because few of us wish to be shot. I refer chiefly to patients with physical complaints referrable to the rectum or the genitals, who demand treatment such as

local injections or operations. If such procedures are carried out they may be interpreted as sexual assaults. Retaliation is in order. Such procedures should be assiduously avoided. The risk is too great. Not long ago a physician was shot through the spine by just such a patient who believed that he had been mutilated by a rectal operation. Recently, a woman patient was seen whose chief complaint was throbbing in the genitals. She had seen numerous gynecologists who had wisely avoided physical treatment. Unfortunately, one physician told her that she needed an operation. Fortunately, he did not perform it but she was given some injections which made the throbbing worse. The implication is obvious.

SUMMARY

In summary, it can be said that psychiatric emergencies arise in general practice almost daily. Most of them the general practitioner is well equipped to meet himself. Others must be dealt with through the help of colleagues but they must all be handled just as one would handle any medical or surgical emergency. Often the need to treat these as quickly and as efficiently as surgical emergencies is not recognized. Unless this is done there may be loss of life; there is almost certain to be prolonged morbidity, needless expense will be incurred and the physician may invite assault upon himself.

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OFFICERS OF THE LOUISIANA STATE MEDICAL SOCIETY 1955 - 1956

The officers of the Louisiana State Medical Society chosen for the years 1955-1956 are a credit to the judgment and ability of the House of Delegates that chose them.

The President is Dr. Max M. Green, a prominent urologist of New Orleans. Dr. Green has served capably and effectively in various capacities in the Orleans Parish Medical Society, of which he has been President, and on committees for the State Society. He brings to the highest position in the Society a comforting degree of discretion and experience, together with a capacity for decision. These qualities are greatly appreciated by the membership and provide confidence for the year.

The President-elect is Dr. Paul D. Abramson, a prominent surgeon of Shreveport, whose activities in the field of organized medicine have been fruitful in the Caddo Parish Medical Society, the Fourth District Medical Society, and in various committees on which he has served with the State Society. He has been Councilor from the 4th District for many years and will bring to the office of President next year a wealth of vision and organizing ability. The House of Delegates is to be congratulated upon this choice.

The First Vice President is Dr. George H. Hauser of New Orleans, who has long been prominent in the field of pathology and public health, and whose services in the cause of organized medicine have extended through many offices and committee chairmanships. As a private practitioner, an officer of the Board of Health, a teacher, and a friend, his elevation to the office of First Vice President is most fortunate for the Society, and he will in the future, as in the past, add valuable counsel to its deliberations.

The Second Vice President is Dr. H. H. Hardy, Jr., a surgeon of Alexandria, who has long been Councilor for the Eighth District. As a worker in the Rapides Parish Medical Society, and in the office of Councilor, and as Chairman of various committees, he has commended himself to the Society most creditably, and his elevation to the position of Vice President is most welcome.

The Third Vice President is Dr. J. Theo. Brierre, a prominent radiologist of New Orleans, whose services in the Orleans Parish Medical Society as Chairman of Arrangements for two annual meetings in New Orleans, and his activities in the State Society, have brought him many congratulations for his energy

and ability. The Executive Committee is most fortunate in having so valuable an addition to its deliberations.

The Past President, Dr. Walter Moss, retires to a position of comfort and security from which he will be able to render valuable advice and due caution. His year as President was a most active and successful one, and with his guidance the organization has been most happily directed.

The Chairman of the House of Delegates is again Dr. W. Robyn Hardy. Under his direction, the business deliberations of the Society have been conducted with fairness, caution, and dispatch. The Society is to be congratulated upon his choice and we congratulate him.

The Vice Chairman is Dr. O. B. Owens of Alexandria, whose work on behalf of organized medicine at the local level and at the State level is greatly to be commended. His knowledge in specialized fields will be invaluable in certain areas.

Dr. C. G. Cole continues as Secretary-Treasurer in the office he has held so capably and with such benefit to the Society. As in the past his experience, judgment, and discretion are invaluable in meeting the problems of the organization.

There are three changes on the Council: Dr. Ralph H. Riggs of Shreveport becomes Councilor for the Fourth District. He has served as Vice Chairman of the House of Delegates and as President of the Caddo Parish Medical Society. These together with other activities have made him most esteemed in the ranks of organized medicine. The Councilor for the Seventh District is Dr. J. Y. Garber of Lake Charles, who has most creditably discharged the functions of various offices in the Calcasieu Parish Medical Society, and whose activities in behalf of our organization have been unselfish and constructive. The Councilor for the Eighth District is Dr. R. E. C. Miller of Alexandria, who has been quite experienced in his work with the Rapides Parish Medical Society, and whose voice on the Council will be most valuable.

The activities and the responsibilities of the Louisiana State Medical Society are expanding each year. The organization, and therefore, its members have a great deal at stake. It is to the credit of our organization and the way in which it is administered that in a succession of years capable men have been found to serve its needs. We are most fortunate in having these men as our officers and Executive Committee for the coming year. The House of Delegates is again to be congratulated.

—o—

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF COMMITTEE ON RESOLUTIONS*

It is felt by the Committee on Resolutions that the 1955 Annual Meeting of the Louisiana State Medical Society held in New Orleans, May 2-4 has been an outstanding one and that this has been the result of efforts, cooperation and assistance of many individuals, groups and business firms.

THEREFORE BE IT RESOLVED that the Society express appreciation for assistance rendered by the following:

Dr. J. Theo Brierre, who has served as Chairman of the Committee on Arrangements and to personnel of all sub-committees on Arrangements.

All members of the Orleans Parish Medical Society—hosts to the Meeting.

Rabbi Nathaniel S. Share who delivered the invocation at the opening meeting of the Society.

Councilman Classen for words of welcome on behalf of the City of New Orleans.

* Adopted by House of Delegates at 1955 Annual Meeting.

Mr. Leo E. Brown, Director, Public Relations, A.M.A., for participation in program.

Dr. F. J. L. Blasingame, President of the Texas State Medical Association and trustee of the A.M.A. who served as annual orator for the meeting.

Dr. Roach who furnished to the House of Delegates information in re Salk vaccine.

Dr. Edgar Hull and Dr. Donovan C. Browne for expressions of welcome on behalf of Orleans Parish Medical Society and New Orleans Graduate Medical Assembly.

The following out-of-state guests who participated in the scientific program:

Dr. Vincent P. Collins, Houston, Texas; Dr. Vernon B. Link, Atlanta, Georgia; Dr. Louis S. Smith, Dallas, Texas; Dr. Morton J. Tendler, Memphis, Tennessee; Dr. Herman Yannet, Southbury, Connecticut.

Members of the Society who participated in the scientific program.

The New Orleans Chamber of Commerce for cooperation and assistance in many phases of the meeting.

The Times-Picayune, New Orleans States and New Orleans Item and newspapers throughout the state for news releases.

Local radio and TV stations for news broadcasts.

Scientific exhibitors.

Technical exhibitors.

Advertisers in program.

The Roosevelt Hotel, headquarters for the meeting, for excellent cooperation in handling hotel accommodations for members and guests and furnishing all requirements for scientific, business and social phases of the meeting.

Other hotels in New Orleans for accommodations furnished members.

Dr. Edwin H. Lawson, Secretary, Louisiana State Board of Medical Examiners, for his comprehensive report submitted to the House of Delegates.

Dr. Walter Moss, President of the Society.

Dr. C. Grenes Cole, Secretary-Treasurer.

Miss Annie Mae Shoemaker, Assistant Secretary-Treasurer, and the entire secretarial staff for assistance prior to and during the meeting.

Mrs. M. C. Wiginton, President, Woman's Auxiliary; Mrs. Edwin R. Guidry and Mrs. Paul G. Lacroix—Chairman of Arrangements for the Auxiliary Meeting.

Expressions of gratitude are also extended to Governor Robert F. Kennon for his continued cooperation in medical matters of interest to the members of the State Society during the past year.

Recommendation

1. It is recommended that a copy of these resolutions be sent to each person and organization mentioned and also published in the Journal of the Louisiana State Medical Society.

Respectfully submitted,
J. E. Clayton, M. D.
R. E. Gillaspie, M. D.
M. C. Wiginton, M. D.,
Chairman.

REPORT OF COMMITTEE ON MEDICAL DEFENSE †

Since report of this Committee to the 1954 meeting of the House of Delegates, six requests for defense in connection with malpractice suits have been received. It was agreed that all of the doctors requesting defense should be defended and the attorney for the Society was so informed.

Of these six cases, four have already been closed. One was voluntarily withdrawn on request of the plaintiff; one was dismissed by the court as a "nuisance" case; two were settled out of court by compromise, on the advice of the attorney; and two are still pending.

One case filed in 1952 was never prosecuted and has been dismissed. All other cases previously filed, and not reported completed, are at the present time waiting final action.

C. B. ERICKSON, M. D., Chairman

ABSTRACTED MINUTES HOUSE OF DELEGATES LOUISIANA STATE MEDICAL SOCIETY

May 2-4, 1955

Minutes

Minutes of the 1954 meeting of *House of Delegates* approved as recorded.

Minutes of meetings of *Executive Committee* since 1954 meeting of House of Delegates approved as recorded.

Special Order

Appointment of Committees: *Credentials*:—Dr. C. E. Boyd, Shreveport, Chairman; Drs. Richard L. Buck and J. Morgan Lyons, both of New Orleans. *President's Report*:—Dr. J. Kelly Stone, New Orleans, Chairman; Dr. Felix Planche, New Orleans; Dr. Arthur D. Long, Baton Rouge. *Resolutions*:—Dr. M. C. Wiginton, Hammond, Chairman; Dr. J. E. Clayton, Norco; Dr. R. E. Gillaspie, New Orleans.

Introduction and recognition of new members of the House of Delegates.

Roll of members who died since 1954 *Meeting* read.

Review of present status of Salk Vaccine by Dr. Roach of Eli Lilly and Company.

Greetings from the Southern Medical Association by Mr. C. P. Loranz, former Secretary-Manager.

Greetings from Dr. F. J. L. Blasingame, *President of Texas State Medical Association* and *Trus-*

† Accepted by the House of Delegates at 1955 Annual Meeting.

tee of American Medical Association.

Greetings from Mr. Leo Brown, *Director of Public Relations of the AMA.*

Greetings from representatives of the Woman's Auxiliary: Mrs. M. C. Wiginton, Immediate Past President, Louisiana State Auxiliary; Mrs. Spencer B. McNair, President, Orleans Parish Auxiliary; Mrs. Leo J. Schaefer, Immediate Past President, American Medical Association Auxiliary; Mrs. George D. Feldner, Immediate Past President, Southern Medical Association Auxiliary; Mrs. Edwin R. Guidry, Chairman of Arrangements for 1955 State Auxiliary meeting.

Announcement of Louisiana Rural Health Conference to be held in New Orleans, November 28-29; invitation extended to all members of the House.

Communications

Tangipahoa Parish Medical Society in re *Accreditation of Hospitals*: Resolution approved. (Copy under "resolutions").

Hoover Commission Report: Sample resolution approved. (Copy under "resolutions").

Action Taken

Recommendation of Executive Committee that *name of a doctor be listed in only one specialty*:—Recommendation to component societies that doctors be listed only as physician or surgeon and if specialist under only one specialty.

Hospital survey submitted by the East Baton Rouge Parish Medical Society and referred to the House of Delegates by the Executive Committee:—Referred back to the Executive Committee for further study.

Sample uniform claim insuranee blanks submitted by Special Committee on Prepayment Insurance of the Council on Medical Service of the AMA:—Approved in principle.

Louisiana Physicians Service, Inc.:—Executive Committee authorized to take necessary steps to see that the papers of transfer of LPS are in proper order and the organization liquidated; notarized records of LPS to be sent to the office of the State Society.

Salk Vaccine—Recommendation that doctors undertake administration of polio vaccine for indigents not otherwise provided for—approved. Doctors to be allowed to say who is indigent and who is not as far as polio vaccine is concerned. Existing Committee on Gamma Globulin to supervise, at state level, distribution of polio vaccine and local societies be requested to appoint similar committees to act at parish level.

Reports without Recommendations

Following *reports accepted as printed*: Secretary-Treasurer; Council; Councilors, First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth Districts; Committees: Advisory Committee to Selective Service, Aid to Indigent Members, Arrangements-1955 Annual Meeting, Blood Banks, Budget and Finance, Chronic Diseases, Committees, Congressional Matters, Evaluation Center for Exceptional Children, Geriatrics, History of Medicine in Louisiana, Hospitals, Journal, Lectures for Colored Physicians, Liaison with Louisiana State Nurses' Association, Malpractice Insurance Rates, Maternal Welfare, Mediation, Medical and Hospital Service in re Insurance Contracts, Medical Defense, Medical Education, Medical Testimony, National Emergency Medical Service, Public Health of the State of Louisiana, Public Policy and Legislation, Scientific Work, Second District Medical Society and Orleans Parish Medical Society, State Hospital Policies, Woman's Auxiliary.

Report of Committee on History of Medicine in Louisiana—discussed by Drs. Isidore Cohn and Arthur Vidrine.

Supplemental report of Committee on Medical and Hospital Service in re Insurance Contracts—Chairman reported action still pending.

Supplemental report of Committee on National Emergency Medical Service—Chairman read bulletin in regard to preparations, instructions, etc. for safety in event of an emergency.

Report of Council on Medical Service and Public Relations—accepted as printed.

Report of Louisiana State Board of Medical Examiners—accepted.

Reports with Recommendations

President: Referred to Committee on President's Report and report of this committee which recommended approval of recommendation No. 1, providing increase of dues will be turned into the general fund and not earmarked especially for the development of the public relations department; approval of recommendations No. 2, No. 4, No. 5 No. 6, No. 7, No. 8 and No. 9; and disapproval of recommendation No. 3; was accepted. These recommendations are as follows: 1. Increase dues ten dollars yearly to develop public relations department. 2. Increase dues five dollars yearly to establish a fund for a domicile. 3. Make provision for a ninth district if no major objection from members concerned. 4. Send copies of abstracted Minutes of House of Delegates to presidents of component societies for their information with suggestion that they be read to the members. 5. Encourage the practice of physicians insisting that prescriptions be filled at pharmacies of patient's own choice (a step forward in keeping peace and harmony resulting from personal communication with representatives of Louisiana Pharmaceutical Association). 6. Serious thought be given to the problem of integration. The Louisiana State Medical Society must be prepared for any eventuality. 7. Resolution to AMA with copies to other state societies, requesting medical schools to intensify medico-legal courses, with emphasis on medical testimony and prevention of malpractice cases. 8. President of each component society be urged to request a lawyer to address each society on malpractice prevention and medical

testimony once each year. 9. Programs related to School Health, Mental Health, Rural Health and Health Council work should continue to be of interest and concern to the physician and organized medicine.

Committee on Accreditation of Hospitals:—1. Committee be continued and allowed to present a full report at a later date—Approved. Resolution submitted and approved. (Copy under "resolutions").

Committee on Alcoholism:—1. The Louisiana State Medical Society go on record as recognizing that alcoholism is a disease which, in many instances, is amenable to treatment through physical and psychological means.—Not approved. 2. As a whole the Society give support to appropriate agencies interested in improving and expanding facilities for the care of alcoholics in Louisiana. —Not approved. 3. Support be given to the program for the care and treatment of indigent alcoholics being carried out at the New Orleans Charity Hospital, through the auspices of the State Board of Institutions, and at the Confederate Memorial Hospital, Shreveport, which programs are currently being supported by funds appropriated by the State Legislature.—Not approved. 4. Program in operation for treatment of indigent alcoholics (including a ten-bed in-patient service and an out-patient service at New Orleans Charity Hospital) be continued and that, if funds permit, the out-patient facilities in this area be increased in order that a greater number of acute alcoholics can be treated. —Not approved. 5. Comparable facilities be established in the Shreveport area. — Not approved. 6. Facilities for care of indigent alcoholics be developed in relation to other state hospitals. (Such a program has been started at the Huey P. Long Charity Hospital at Pineville.) — Not approved. 7. Program in operation at the Central Louisiana State Hospital for the longer-term care of indigent alcoholics be continued and expanded.—Not approved. 8. Since a large number of alcoholic patients are admitted and cared for at the East Louisiana State Hospital, plans now being developed for the establishment of a colony-type care for such patients at the institution be carried through to completion. (This program will include the active treatment of acute cases and a program to care for the longer-term cases which are not applicable for short-term therapies. It is proposed that one of the buildings in the farm colony at Jackson be set aside for this purpose, with a physician who has special interest in the care of alcoholics in charge.—Not approved. 9. The new mental health center in Lafayette, now being organized by the State Board of Institutions, through the superintendent of the Central Louisiana State Hospital, include a small in-patient service and extensive out-patient facilities as well as a program for the treatment of indigent alcoholics, in its plan.—Not approved. 10. When State Mental Hygiene Clinic facilities are expanded throughout the State, consideration be given to include in this program a plan to maintain out-patient facilities for indigent alcoholic patients.—Not approved. 11. The Society give support to worthy programs for the education of the public in matters pertaining to alcoholism, covering known facts and emphasizing prevention.—Approved. 12. Papers on various aspects of alcoholism be presented from time to time at parish medical society meetings and on the annual scientific program of the State Society.—Approved. 13. State Society continue to support suitable legislation for provision of funds for care and treatment of indigent alcoholic patients.—Not Approved.

Committee on American Medical Education Foundation:—1. Notify future chairmen of annual meetings for all state chairmen of the AMEF —Approved. 2. Furnish chairman for 1955-56 all available material both from the state and national level.—Approved. 3. Use a direct mail campaign to initiate the drive for funds and adopt the Ohio slogan: "Give either through your Alumni Fund or through AMEF—But Give".—Approved.

Cancer Commission:—1. Speakers for scientific programs of the State Society be secured through the Cancer Commission of the State Society and the Louisiana Division of the American Cancer Society.—Approved. 2. Parish and district societies be advised concerning availability of speakers and films on cancer; also concerning tumor conferences held at Tulane, LSU and elsewhere in the state.—Approved. 3. State Society go on record as supporting extension of the type of cancer registry which has been established in Charity Hospital in New Orleans and each hospital in the state be urged to consider the matter of establishing a cancer registry.—Approved. 4. Cancer Commission take initiative in establishing an unofficial Cancer Coordinating Committee to include representation of Louisiana State Medical Society Cancer Commission, Cancer Coordinator at Tulane University School of Medicine, Cancer Coordinator at Louisiana State University School of Medicine, a representative of the Louisiana State Department of Health and a medical representative of the American Cancer Society.—Approved. 5. Amount of $1,000.00 be budgeted for expense incident to activities of the Cancer Commission during 1955.—Referred to Committee on Budget and Finance; recommendation of Budget and Finance Committee that this amount be appropriated—Approved.

Committee on Child Health:—1. Express to Mr. Jackson, of the State Department of Education, a desire to cooperate with his department in regard to public school health programs whenever possible.—Approved. 2. Councilors of the State Society be requested to speak with members in their respective districts concerning endorsement of letters sent out by the State Society and the various parish societies, in regard to cooperation and

direction of local school health programs.—Approved. 3. State Society inform the Director of the Department of Institutions that the Society will be glad to cooperate and help in any manner possible when problems arise in regard to the medical care of inmates in any state institution.—Approved.

Committee on Diabetes:—1. Establishment of committees on diabetes in every parish and district society.—Approved. 2. Material published by American Diabetic Association furnished to parish and district society committees for use during Diabetes Detection Week.—Approved. 3. Encourage more talks on all phases of diabetes in local medical societies.—Approved. 4. Use facilities of Louisiana Diabetic Association and its members, as key workers, in the Diabetes Detection Drive.—Approved.

Committee on Domicile:—1. If dues are increased and certain amount earmarked for Domicile Fund, Committee be continued and instructed to further explore possibilities of securing a suitable permanent home.—Approved.

Committee on Federal Medical Services:—1. The State Society reiterate concurrence with recommendations of the House of Delegates of the AMA (as reported by the 1954 Committee), and the Secretary-Treasurer of the Society be instructed to inform the AMA of this action.—Approved. 2. Request, by letter, that local medical societies continue special committees to further these AMA and State Society principles and develop more interest in these problems.—Approved.

Committee on Gamma Globulin:—1. Should the Salk polio vaccine be declared, after a thorough study by the Poliomyelitis Vaccine Evaluation Center, to be safe and effective and is licensed by the National Institutes of Health, it is recommended that the members of the Society cooperate wholeheartedly with the State Department of Health in carrying out a program to vaccinate the first and second grade children of each public, private and parochial school of Louisiana, on a voluntary basis.—Approved.

Committee on Industrial Health:—1. State Society undertake a study of health as related to industry in Louisiana.—Not approved.

Committee on Medical Indigency:—1. Committee be continued.—Approved.

Committee on Mental Health:—1. The Committee on Mental Health be composed of members with overlapping terms.—Referred to Committee on Committees and recommendation of this Committee that the recommendation be disapproved, was accepted.

Committee on Neuropsychiatric Service at Charity Hospitals:—1. Return to the Coroner's Commitment as it was formerly used.—Approved.

Committee on Public Policy and Legislation (supplemental report):—1. Louisiana State Medical Society and Woman's Auxiliary of the State Society make application for membership in the Louisiana Organizations for State Legislation (LOSL).—Approved. Suggested resolution to AMA in re cult practice of medicine.—Approved. (Copy under "resolutions".)

Committee on Public Relations Counsel:—1. A lay assistant to the Secretary-Treasurer be appointed by the Secretary-Treasurer with approval of the Executive Committee. He shall also be dismissed, if the necessity arises, by the Secretary-Treasurer, with the approval of the Executive Committee. Such an individual shall not have authority to make policies and decisions for the Society. His salary shall be six thousand dollars ($6,000.00) per year.—Approved with deletion of last sentence. 2. Proposed budget incident to activity as planned with assistant to the Secretary-Treasurer.—The Committee on Budget and Finance recommended deletion of this proposal and this recommendation of the Budget and Finance Committee was approved. 3. Annual dues be increased from thirty-five ($35.00) to fifty dollars ($50.00) per year.—Referred to Committee on Budget and Finance and recommendation of this Committee that dues be increased from $35.00 to $50.00 was accepted. 4. Section 1 of Chapter XI of By-Laws be amended (to increase dues to $50.00, five dollars to be placed in a Domicile Fund)—Referred to Committee on Budget and Finance and recommendation of this Committee that the By-Laws be so amended, was accepted. (Copy of Section under "amendments"). 5. The Public Policy and Legislation Committee may secure other sources of help such as previously obtained, if it is impossible to employ a satisfactory fulltime assistant to the Secretary-Treasurer; subject to the approval of the Executive Committee. All other monies needed by this Committee shall be allotted by the Budget and Finance Committee with the approval of the Executive Committee and the House of Delegates, according to the Constitution and By-Laws.—Approved. 6. A sub-committee of the Executive Committee, composed of three (3) members, one of whom shall be the President of the Society as its Chairman, be appointed to work with the Chairman of the Council on Medical Service and Public Relations and the Public Policy and Legislation Committee, and the Secretary-Treasurer of the Society to coordinate these respective services to the best advantage of the members of the Society as a whole.—Referred to Committee on Committees and recommendation of this Committee that such a subcommittee be disapproved, was accepted.

Committee on Resolutions:—A copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society.—Approved.

Committee on Rural and Urban Health:—1. The Committee on Rural and Urban Health be continued.—Approved. 2. Positive action be taken concerning requested allotment of $1,000,00 for ex-

pense of this Committee.—Referred to Committee on Budget and Finance and recommendation of this Committee that this amount be appropriated, was accepted.

Past Presidents' Advisory Council:—1. Message to Governor Kennon expressing appreciation of his cooperation in medical matters.—Approved. 2. Message to Dr. Rudolph Matas expressing regret at his inability to attend the 1955 session.—Approved. This Council also expressed approval of amendments to the Constitution and By-Laws as recommended by the special committee on Revision of the Charter, Constitution and By-Laws, and approval of recommendation of the president and the Committee on Public Relations Counsel that dues be increased to $50.00 per year.

RESOLUTIONS APPROVED

Accreditation of Hospitals

WHEREAS, The American Medical Association is the recognized official organization to represent medicine in the United States and,

WHEREAS, It is not only the privilege but the obligation of this organization to protect and safeguard medical care to the patients and to assist in every way possible, to maintain the high standards of medicine and surgery and,

WHEREAS, the AMA is the only organization which can and should speak officially for physicians regardless of which field of medicine they practice, and

WHEREAS, there is a marked growing unrest due to the fact that the AMA has not met its full obligations in regard to Accreditation of Hospitals for patient care and,

WHEREAS, there are two phases of Accreditation of Hospitals, one having to do with strictly housekeeping problems — the part which is unquestionably that of hospitals — and the other having to do with the care of the patient by the physician, staff organization and, of course, the intern and resident training program and,

WHEREAS, if this obligation is not met satisfactorily and soon, it will be increasingly difficult to discharge our responsibility, which is the patient, whereby we can render him the best medical service in the most economical fashion.

NOW THEREFORE, BE IT RESOLVED, that the American Medical Association assume its true responsibility and establish an Accreditation of Hospitals in regard to care of patient by physicians, staff organization and the intern and resident training program.

BE IT FURTHER RESOLVED, that if the American Hospital Association still has the desire to assist in the Accreditation of Hospitals that they be urged and invited to cooperate with the American Medical Association in continuing their accreditation in regard to the strictly physical problem which is unquestionably their responsibility.

BE IT FURTHER RESOLVED, that the House of Delegates of the Louisiana State Medical Society present this resolution to the House of Delegates of the American Medical Association.

Accreditation of Hospitals

RESOLVED that the House of Delegates of the Louisiana State Medical Society instruct the secretary of the State Society to send a copy of the resolution in re accreditation of hospitals, which was approved at the first session of this meeting, to secretaries of all state medical societies, asking them to have their societies support this resolution in the House of Delegates of the AMA when presented by the delegates of the Louisiana State Medical Society.

State Board of Health

WHEREAS the legally authorized guardian of the public health in Louisiana is the Louisiana State Board of Health; and

WHEREAS the Louisiana State Board of Health is the oldest State Board of Health in the United States; and

WHEREAS the Louisiana State Board of Health is now celebrating its 100th Anniversary; and

WHEREAS distinguished physicians of Louisiana spearheaded its organization and development and have served with distinction as members of the Louisiana State Board of Health; and

WHEREAS the Louisiana State Board of Health has been in very cordial relations with the Louisiana State Medical Society;

THEREFORE BE IT RESOLVED that the Louisiana State Medical Society in convention at its 75th Annual Meeting, go on record extending congratulations to and for the accomplishments of the Louisiana State Board of Health and that this resolution be spread in the minutes of the Louisiana State Medical Society in convention, spread on the pages of the Louisiana State Medical Society Journal and that a copy be sent to the Louisiana State Board of Health.

Dr. M. V. Hargrove

BE IT RESOLVED by the House of Delegates of the Louisiana State Medical Society that M. V. Hargrove, M. D., the only qualified physician in our state legislature, receive the commendations of this body, for his service to the citizens of Louisiana in protecting the public welfare, and his honest endeavor in behalf of all of its citizens.

Past Presidents

That the members of this House send greetings and good wishes to the past presidents of the Louisiana State Medical Society who are absent and express the regret of the House that they could not attend and the hope that they will be able to attend future meetings.

American Medical Association
in re Cult Practice of Medicine

BE IT RESOLVED by the House of Delegates of the Louisiana State Medical Society, that the AMA communicate with each state society under its jurisdiction, requesting that the societies encourage the medical schools in their respective states to offer systematic and regular instruction concerning the cult practice of medicine; and that the state society concerned offer its services to the medical schools in this behalf.

Hoover Commission

WHEREAS The Louisiana State Medical Society has always fostered the concept of better government at a better price for all Americans; and

WHEREAS the Louisiana State Medical Society has consistently endorsed policies established to insure efficient administration of the Federal Government and to provide maximum savings to the taxpayer; and

WHEREAS, the bipartisan First Hoover Commission, which was unanimously created by Congress in 1947, brought about a number of significant improvements in the administration of our Federal Government; and

WHEREAS a bipartisan New Hoover Commission was unanimously created by Congress in 1953 with the major purpose of continuing the search for new ways and means of saving money for the taxpayer; and

WHEREAS this New Hoover Commission is preparing reports for submission to the Congress with recommendations to provide more orderly and responsible government at less cost; now, therefore

BE IT RESOLVED by the Louisiana State Medical Society that we reaffirm our support of such actions in the public interest which are designed to bring about greater efficiency and dollar savings in government operations; and

BE IT RESOLVED that the Louisiana State Medical Society urges the President and the Congress to take appropriate steps to carry out the recommendations of the New Hoover Commission; and

BE IT FURTHER RESOLVED that the Louisiana State Medical Society alert the members of this organization to the need — on a patriotic, non-political basis — for public understanding, cooperation and action in support of the recommendations of the New Hoover Commission; and

BE IT FURTHER RESOLVED that the members and officials of the Louisiana State Medical Society individually and by cooperating with the Citizens Committee for the Hoover Report — endorse and work toward achieving the vital goal of better, more efficient and less expensive government for all the peoples of our Nation; and

BE IT FURTHER RESOLVED that copies of this resolution be sent to appropriate legislative representatives in Washington, D. C., and to the national headquarters of the Citizens Committee for the Hoover Report, 441 Lexington Avenue, New York 17.

RESOLUTION TABLED

Louisiana Hospital Service, Inc.

RESOLVED that the Louisiana State Medical Society grants its approval to Louisiana Hospital Service, Inc. as an agency to provide voluntary prepaid non-profit hospitalization, medical and surgical insurance.

AMENDMENTS ADOPTED

By-Laws

Chapter XI. (Assessments and How Payable) Section 1. (Submitted by Committee on Public Relations Counsel, approved by Committee on Budget and Finance and Past Presidents Advisory Council).

Assessments and How Payable — Each active member shall pay into the Society an *annual assessment of fifty dollars* ($50.00) which shall constitute his membership dues. Those specifically exempted in the Constitution shall not be liable for this assessment. Intern members shall pay the sum of one dollar ($1.00) per annum. Of the amount collected from active members, one dollar and fifty cents ($1.50) per capita shall be set aside as an annual entertainment fund. Any amount of this per capita appropriation not spent for an annual meeting and any surplus of other funds secured by Arrangements Committees and not expended for an annual meeting shall be placed in the general fund of the Society. In addition, one half dollar ($ .50) per capita shall be paid from dues collected from active members into the Medical Defense Fund, one dollar ($1.00) into the Indigent Physicians Fund, two dollars ($2.00) into the fund of the Committee on Public Policy and Legislation and *five dollars* ($5.00) *into a Domicile Fund.* After the first day of July and before the first day of October new active members shall pay one half of the annual dues for the fiscal year; after the first day of October of the current year, new active members admitted to the Society shall pay one quarter of the annual dues for the fiscal year.

Chapter 1. (*Membership*) *Section* 2. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Rights — The name of a physician upon the properly certified roster of members of a component district or parish society, *who has been approved by the Executive Committee of the Louisiana State Medical Society,* shall be prima facie evidence of his right to register at the annual sessions of this Society provided his State

Society dues have been received for the current year.

Chapter IV. (*House of Delegates*) *Section* 6. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council). *Section to be deleted.*

Charters — It (House of Delegates) shall, upon application, provide and issue charters to district and parish societies organized to conform to the spirit of this Constitution and By-Laws.

Chapter IV. (*House of Delegates*) *Section* 7. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Organization — In sparsely settled sections it (House of Delegates) shall have authority to organize the physicians of two or more parishes into societies to be designated by hyphenating the names of two or more parishes so as to distinguish them from district and other classes of societies, and these societies, when organized and (omit "chartered") *issued a charter by the Executive Committee of the Louisiana State Medical Society* shall be entitled to all the privileges and representation provided herein for parish societies until such parishes may be organized.

Chapter VIII.(*Council*) *Section* 1. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Meetings — The Council shall hold meetings during the annual session of the Society (omit "at such")*and at other times* as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the date of the first meeting of the Executive Committee after the annual meeting of the House of Delegates for reorganization and for the outlining of work for the ensuing year. At this meeting it shall elect a Chairman and Secretary and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such time as may be provided.

Chapter XV. (*Parish Societies*) *Section* 5. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Qualifications of Members — Each parish society shall judge of the qualifications of its own members, but, as such societies are the only portals to this Society, and to the American Medical Association, *no physician should be elected to membership who would not meet the qualifications and requirements prescribed for membership in the Louisiana State Medical Society, by its Constitution and By-Laws.* (omit — "every reputable and legally registered physician who is practicing, or who will agree to practice nonsectarian medicine, shall be eligible for membership"). Before a charter is issued to any parish society, full and ample notice and opportunity shall be given to every such physician in the parish to become a member.

Chapter XV. (*Parish Societies*) *Section* 13. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Duties of Secretaries of Component Societies — The secretary of each parish society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the parish, in which shall be shown the full name, address, college and date of license to practice in this state, and such other information as may be deemed necessary. He shall furnish an official report containing such information upon blanks supplied him for the purpose, to the Secretary of this Society. In keeping such roster the secretary shall note any changes in the personnel of the profession by death, or by removal to or from the parish *and status of all military members,* and in making his annual report he shall be certain to account for every physician who has lived in the parish during the year.

Constitution

Article IV. (*Composition of the Society*) Section 4. (Submitted by the Executive Committee at the 1954 meeting and approved by the House of Delegates; final vote of approval at 1955 meeting).

Inactive Members — Inactive membership shall include physicians who have been in active practice and members of long standing of the State Society who shall be approved for such membership by the Executive Committee. Also members who become permanently or temporarily incapacitated or of advanced age with limited practice, if such membership is requested and is approved by the Executive Committee. They shall not be entitled to medical defense nor shall they be eligible to hold office. No dues shall be required of inactive members.

Amendments Approved
Final Action to be taken at 1956 Meeting

Constitution

Article IV. (*Composition of the Society*) *Section* 1. (Submitted by the Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Active Members — The active members of this Society shall be the active members of the component district and parish medical societies, *who shall be approved by the Executive Committee of the Louisiana State Medical Society;* also physicians otherwise eligible to active membership in any district or parish not having a component society; provided, that after the organization in such district or parish of a component society they shall become members of said society or forfeit membership in the State Society.

Article IV. (*Composition of the Society*) *See-*

tion 2. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Associate Members — Associate members of component societies *who shall be approved by the Executive Committee of the Louisiana State Medical Society*, will be eligible for associate membership; also physicians in the service of the Veterans' Bureau, Army, Navy or Public Health Service of the United States, who are on active duty and stationed in the state may be elected to associate membership when endorsed by two active members in good standing of the Society to whom they are personally known. Such membership is not to have the privileges of executive character or protection of medical defense. Dues for associate membership will be one-half amount of dues for active membership.

Article IV. (Composition of the Society) Section 5. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Intern Members — Physicians serving internships or residencies in accredited hospitals shall during their period of internship or residency be eligible to membership in this Society through their respective component societies as intern members *upon approval of the Executive Committee of the Louisiana State Medical Society.* They shall not be entitled to medical defense, nor shall they be eligible to hold office or vote. Dues for intern members shall be $1.00 per year.

ELECTION OF OFFICERS, DELEGATE AND ALTERNATE TO AMA AND COMMITTEES

President-elect — Dr. Paul D. Abramson, Shreveport.

First Vice-President — Dr. George H. Hauser, New Orleans.

Second Vice-President — Dr. H. H. Hardy, Alexandria.

Third Vice-President — Dr. J. T. Brierre, New Orleans.

Chairman of House of Delegates — Dr. W. Robyn Hardy, New Orleans.

Vice-Chairman of House of Delegates — Dr. O. B. Owens, Alexandria.

Councilor, Third District — Dr. Guy R. Jones, Lockport.

Councilor, Fourth District — Dr. Ralph H. Riggs, Shreveport.

Councilor, Sixth District — Dr. Arthur D. Long, Baton Rouge.

Councilor, Seventh District — Dr. J. Y. Garber, Lake Charles.

Councilor, Eighth District — Dr. R. E. C. Miller, Alexandria.

Delegate to AMA (1956 and 1957) — Dr. J. Q. Graves, Monroe.

Alternate to Delegate to AMA (1956 and 1957) — Dr. A. A. Herold, Shreveport.

Committee on Committees — Dr. E. L. Leckert, New Orleans, Chairman; Dr. J. Kelly Stone, New Orleans; Dr. W. E. Barker, Jr., Plaquemine.

Committee on Journal — Dr. Sam Hobson, New Orleans; Dr. J. E. Knighton, Shreveport.

Committee on Medical Defense — Dr. J. Kelly Stone, New Orleans.

Committee on Public Policy and Legislation — Dr. E. L. Zander, New Orleans; Dr. J. E. Clayton, Norco; Dr. Leo Kerne, Thibodaux; Dr. C. E. Boyd, Shreveport; Dr. H. H. Cutler, Monroe; Dr. A. G. Robert, Baton Rouge; Dr. P. L. McCreary, Lake Charles; Dr. M. B. Pearce, Alexandria; Dr. Max M. Green, New Orleans (President-LSMS); Dr. C. Grenes Cole, New Orleans (Secretary-Treasurer LSMS).

Committee on Scientific Work — Dr. C. Grenes Cole, New Orleans (Secretary-Treasurer LSMS), Chairman; Dr. Sam Hobson, New Orleans; Dr. M. D. Hargrove, Shreveport.

FUTURE ANNUAL MEETINGS

Dates and places: — (1956—Alexandria; 1957—New Orleans; 1958—Shreveport; 1959—New Orleans); 1960—Invitation to Baton Rouge accepted; if hotel accommodations unavailable, meeting to be held on Gulf Coast.

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY ELECTS NEW OFFICERS FOR 1955 - 1956

The nineteenth annual meeting of The New Orleans Graduate Medical Assembly will be held February 27—March 1, 1956, headquarters at the Municipal Auditorium.

The following officers and members of the Executive Committee have been elected for this year:

Dr. Donovan C. Browne, President
Dr. Eugene H. Countiss, President-elect
Dr. Walter P. Gardiner, First Vice-President
Dr. Cuthbert J. Brown, Second Vice-President
Dr. P. L. Querens, Third Vice-President
Dr. Maurice E. St. Martin, Secretary
Dr. Jules Myron Davidson, Treasurer
Dr. Charles L. Brown, Director of Program
Dr. Ralph M. Hartwell, Assistant Director of Program
Dr. E. Perry Thomas, Assistant Director of Program

Executive Committee

Dr. Woodard D. Beacham (retiring President)
Dr. George C. Battalora
Dr. Sam Hobson
Dr. Barrett Kennedy
Dr. Ambrose H. Storck

L S U ANNOUNCES FELLOWSHIPS FOR TEACHERS OF TROPICAL MEDICINE

The Louisiana State University has received from the China Medical Board of New York a grant of $80,000 to support for two years a program of fellowships for teachers of tropical medicine and parasitology in U. S. medical schools to obtain practical experience in these subjects in the tropics. The program will be administered by Dr. William W. Frye, Dean of the School of Medicine, and Dr. Henry E. Meleney, Research Professor of Medicine. It has been inaugurated as a result of a recent survey of the instruction in these subjects in the medical schools, and of the qualifications of the faculty members conducting the instruction. This survey indicated that the amount of time allotted to Parasitology has decreased only slightly since World War II, but that Tropical Medicine as an entity in teaching has almost disappeared. The survey also revealed that over half of the teachers of Parasitology have had no experience in the tropics.

The localities in which fellows will receive experience during the early part of the program are the San Juan de Dios Hospital, San José, Costa Rica, under the direction of Dr. Antonio Peña Chavarría, and the School of Medicine, University of Puerto Rico, San Juan, under the direction of Dean E. Harold Hinman. Fellows will have a brief period of orientation at the School of Medicine, Louisiana State University, before proceeding to the tropics. Seventy-seven teachers from 53 schools have expressed a desire to receive fellowships in the program. It is also expected that some of the experienced teachers in these fields will participate from time to time as consultants and instructors in the tropical centers.

Not more than five fellowships will be awarded for any one period in each tropical area. The first fellowship period will be July and August 1955. The fellows for this period are in process of selection. Tentatively four fellowship periods are planned for each year with one-month intervals between periods. Teachers who have expressed a desire for such a fellowship will be given an opportunity to apply for a period convenient for them. Other teachers in U. S. medical schools who are interested in this type of fellowship may secure further information from Dr. Meleney at the School of Medicine, Louisiana State University, New Orleans 12, Louisiana.

BOOKLET ON DRUG PRICES GETS ENTHUSIASTIC RESPONSE

Requests by the drug industry and physicians for a new consumer booklet called "I Hate To Buy Drugs, But . . . " have been so overwhelming that three printings, totaling 660,000 copies, have failed to keep up with demand, it is reported by Dr. Theodore G. Klumpp, president of the National Pharmaceutical Council and of Winthrop-Stearns Inc.

Terming the response "one of the most enthusiastic in my experience," Dr. Klumpp noted that the 660,000 copies were requested within one week after announcement of the booklet's availability. A fourth printing of 250,000 copies is now underway to fill requests pouring in daily to Newell W. Stewart, executive vice president of the Council, which is located at 610 Fifth Avenue, New York City.

REVISION OF FOREIGN QUARANTINE REGULATIONS

The first major revision of foreign quarantine regulations since 1946 has been completed by the Public Health Service. The revision, which became effective January 10, affects some 270 seaports, airports, and border entry points where the regulations are administered by medical officers and inspectors of the Division of Foreign Quarantine, Public Health Service. The regulations deal chiefly with six quarantinable diseases: smallpox, yellow fever, cholera, plague, typhus, and relapsing fever.

Changes in the regulations reflect recent advances in international reporting of disease outbreaks. They also reflect the improvement of health practices on such matters as food and water sources for ships and aircraft, and disposal of waste. Many of the changes are based on United States commitments under International Sanitary Regulations of the World Health Organization. The international regulations are intended to insure uniformity in quarantine measures and maximum protection against the international spread of disease, and to prevent unnecessary interference with world traffic.

AIR POLLUTION

There has been increasing evidence that polluted air constitutes a hazard to individual and community health and welfare in certain of the highly industrialized or large urban areas of the country. Specific occurrences of smoke, pollution, and fog—now known as "smog"—have been accompanied by excessive mortality and morbidity experiences during periods of their prevalence. Such episodes have happened both in this country and abroad. The more devastating of these took place in Glasgow in 1909 and 1925; the Meuse Valley, Belgium, in 1930; London in 1948 and 1952; Donora, Pennsylvania, in 1948; and Poza Rica, Mexico, in 1950.

The latest and most highly publicized occurrences of community air pollution are those which affected Los Angeles in recent years. It has also been shown that air pollution has adverse effects on plants and animals upon which this country depends for food, fiber, and other essential commodities. The consequences, if any, of long term exposure to subacute concentrations of air pollutants on man, animals, or plants have never been evaluated adequately.

ANTIBIOTIC FOR TUBERCULOSIS

Discovery of a new antibiotic which has produced "impressive" improvement in severe pulmonary tuberculosis cases and "good" results in stubborn infections of the genito-urinary tract has been disclosed in Atlanta, Georgia.

The occasion was the 14th Veterans Administration-Army-Navy Conference on the Chemotherapy of Tuberculosis, which was held in cooperation with the National Tuberculosis Association.

The new antibiotic, known by the trade-mark Seromycin and the generic name Cycloserine, was discovered in research laboratories of Commercial Solvents Corporation at Terre Haute, Indiana. Commercial Solvents arranged for the early clinical research and then set up a joint research project with Eli Lilly and Company.

If further clinical work firmly establishes the antibiotic's medical usefulness, Lilly will develop Seromycin's pharmaceutical forms and will market them.

AMERICAN SOCIETY OF MEDICAL TECHNOLOGISTS

The American Society of Medical Technologists will meet for the 23rd annual convention at the Jung Hotel, New Orleans, the week of June 12-17, 1955. Anticipated attendance is from 1200 to 1500 with official representation from each of the forty-eight states, Puerto Rico and Hawaii. This meeting will give technologists engaged in medical laboratories or in teaching students in approved schools of Medical Technology an opportunity to keep abreast of changes in procedures, new methods, latest developments in laboratory technic, and to exchange ideas and information.

Awards will be given for outstanding scientific papers submitted by members for the best individual scientific exhibit, best State exhibit, best State Publication and for photography.

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WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

OFFICERS — 1955 - 1956

Consultant and Advisor	Mrs. Arthur Herold	Shreveport
Officers		
President	Mrs. Jules Myron Davidson	New Orleans
President-elect	Mrs. W. A. K. Seale	Sulphur
First Vice-President	Mrs. D. B. Barber	Pineville
Second Vice-President	Mrs. Wiley A. Dial	E. Baton Rouge
Third Vice-President	Mrs. C. Elmo Boyd	Shreveport
Fourth Vice-President	Mrs. Edward M. Harrell	Lafayette
Recording Secretary	Mrs. Dwight S. Danburg	Greenwell Springs
Treasurer	Mrs. Spencer B. McNair	New Orleans
Corresponding Secretary	Mrs. William J. Rein	New Orleans
Parliamentarian	Mrs. Aynaud F. Hebert	New Orleans
District Councilors		
First District	Mrs. Max Mayo Green	New Orleans
Second District	Mrs. Roy B. Harrison	New Orleans
Third District	Mrs. James B. Montgomery	Lafayette
Fourth District	Mrs. H. W. Boggs	Shreveport
Fifth District	Mrs. Eldredge L. Carroll	Columbia
Sixth District	Mrs. J. O. Hoth	E. Baton Rouge
Seventh District	Mrs. Walter Moss	Lake Charles
Eighth District	Mrs. John A. Worley	Alexandria

LOUISIANA'S THREE TOP WINNERS IN A.A.P.S. CONTEST TOP RECORD OF ANY STATE IN ANY NATIONAL ESSAY CONTEST THUS FAR

Dr. Mal Rumph, Essay Contest Chairman of the American Physicians and Surgeons essay contest, "The Advantages of Private Medical Care," furnishes us with both headline and "lead" for the story of the essay contest sponsored nationally by the A.A.P.S., in Louisiana by the Woman's Auxiliary to the Louisiana State Medical Society, and locally by the parish auxiliaries throughout the state.

It is often said that "the best part of every party is the ending", and seldom was this so true as when Mrs. Dwight Danburg, Louisiana State Essay Contest Chairman, telephoned past president Mrs. M. C. Wiginton the morning after the convention ended to tell her that Louisiana had placed all three of its entries in the six prize winning places of the contest. Margie Fastring, of New Orleans placed first, Rochelle Green, also of New Orleans was fourth, and Millie Robinson of Alexandria sixth.

After appropriate publicity was secured in New Orleans and Alexandria papers, through the efforts of Dr. Edwin L. Zander, godfather of the essay contest, the Association of Commerce of New Orleans chose to honor the young essayists by dedicating their Members' Council luncheon on Thursday, May 12, to presentation of the national prizes and honoring the winners, the medical profession, and the auxiliary workers.

At the head table were the three lovely essayists who thoroughly disprove the adage of beauty and brains not going together, Dr. Zander as a member of the Executive Board of the AAPS, and Dr. Max Green as president of the Louisiana State Medical Society. Three tables in the beautiful Blue Room of the Roosevelt Hotel were reserved for the parents of the three girls, judges of the contest, officials of local and state medical societies and auxiliaries and interested workers.

Those present included: parents, Mr. and Mrs. B. L. Fastring, Mr. and Mrs. Emmanuel Green of New Orleans, and Mrs. Robinson of Alexandria. Judges able to attend were: Colonel John E. Adkins, Jr., attorney, Mrs. Thomas Kelly of the Catholic Council of Cooperative Clubs, and Dr. C. C. Henson, Executive Director of the Edward G. Schlieder Fund.

In addition to Drs. Green and Zander, Dr. C. Grenes Cole, Secretary-Treasurer of the Louisiana State Medical Society, Dr. Edgar Hull, President of the Orleans Parish Medical Society, Dr. Bonnie Weilbacher, immediate past president of the Orleans Parish Medical Society, Dr. Hugh T. Beacham, Third Vice-President, and Mr. A. J. Kuhlmann, Executive Secretary of the Orleans Parish Medical Society, were present.

Mr. Edwin E. Eley represented the public school system of New Orleans, and Father Charles Hardy of St. Dominic's parish represented the parochial school department of superintendence.

Interested auxiliary members were, Mrs. Jules Myron Davidson, Mrs. Spencer B. McNair, Mrs. Robert Rougelot, Mrs. C. Grenes Cole, Mrs. George D. Feldner, Mrs. Dwight Danburg, Mrs. Mannie Mallowitz, Mrs. William Rein, Mrs. Felix Planche, and Mrs. Edwin R. Guidry.

Concerning the girls who brought honor to themselves, their city, state, and the medical auxiliaries and societies interested thereof, we

have to present the following facts as inspiration for the 1956 Contest.

Margie Fastring, who has won eleven hundred dollars for a fifteen hundred word essay is a shining example of the copy book maxim, "Try, try again." Margie entered the contest for three consecutive years before achieving her "first in city, state and nation." record. Eighteen year old Margie, a senior at Mt. Carmel Academy has been taught by the nuns of this order for the full twelve years of her schooling, and attributes her success to the efficiency with which she has been taught, and to the loyal encouragement of her parents, with her deep appreciation going to the groups which sponsor the essay contest. The prize winning money has literally "changed the face of the world" for Margie who will now register at Loyola University in the fall and supplement her nest egg with an out-of-school part time job.

Rochelle Green, who placed third in New Orleans, second in Louisiana, and fourth in the nation admits with the disarming candor of teen agers that her entrance in the medical essay contest was more or less compulsory. Everybody in Miss Fortunate Collins' Senior class in English at Fortier High School had as a term assignment entrance in one of three contests. Rochelle chose the "Advantages of Private Medical Care", and from being picked the best in her class, sailed on to win National honors. Rochelle is a member of the National Honor Society of Secondary School Students, and will attend the University of Texas come this fall.

Millie Robinson, who won first place in Rapides Parish, third in Louisiana, and sixth in the Nation, has an established interest in medicine and will enroll at Louisiana State University in the fall for her academic work, in preparation for a nursing career. Millie entered the AAPS contest two years ago and placed third in the parish. Her interest in the topic grew steadily, and she was successful this year in placing in all three contests. Millie, who is the daughter of Mr. and Mrs. John M. Robinson of Alexandria, is a member of the National Honor Society and an honor roll student at Bolton High School. She attributes her success to the guidance and leadership of her English teachers at Bolton, and to her parents for their patience and encouragement.

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BOOK REVIEWS

This Pace is not Killing Us; by J. I. Rodale, Emmaus, Pa., Rodale Books, Inc., 1954, Pp. 64, Price $1.00.

The author of this 64 page essay believes fervently and completely that it is not the pace of our lives but its laxity and ease that is killing us off by heart disease. He has quite selectively quoted medical and other authorities to prove that heart disease derives from destructive inactivity and wrong diet. This book makes interesting reading though it is of doubtful value to the practitioner.

IRVIN A. KRAFT, M. D.

Surgical Treatment of Cancer of the Cervix; by Joe Meigs, M. D. (Ed.), New York, Grune and Stratton, 1954, Pp. 462, Price $12.00.

This is an excellent book on the gross pathology and treatment of cancer of the cervix and contains excellent anatomical drawings. The plates of the circulatory and lymphatic systems are extremely clear. The discussions and diagrams of the common surgical procedures from simple total hysterectomy to pelvic exenteration are well-presented. This book should be in the library of anyone interested in the surgery of cancer of the cervix.

CHARLES C. ABBOTT, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, N. Y.: Cerebral Vascular Diseases, by Irving S. Wright, M. D. and E. Hugh Luckey, M. D.; Cardiac Auscultation, by J. Scott Butterworth, M. D., Maurice R. Chassin, M. D., and Robert McGrath, M. D.

Little, Brown & Co., Boston: The Care of Your Skin, by Herbert Lawrence, M. D.

W. B. Saunders Co., Phila.: Surgery of the Alimentary Tract, by Richard T. Shackelford, M. D., assisted by Hammond J. Dugan, M. D. (Volumes 1, 2 and 3).

Springer Publishing Co., Inc., N. Y.: Should the Patient Know the Truth?, edited by Samuel Standard, M. D., and Helmuth Nathan, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Pain: Its Mechanisms and Neurosurgical Control, by James C. White, M. D., and William H. Sweet, M. D.; Practical Medical Mycology, by Edmund L. Keeney, M. D., edited by Roscoe L. Pullen, M. D.; Angiographic Localization of Intracranial Masses, by Arthur Ecker, M. D., and Paul A. Riemenschneider, M. D.; Kinesiology of the Human Body Under Normal and Pathological Conditions, by Arthur Steindler, M. D.; The Therapy of Skin Tuberculosis, by Gustav Riehl, M. D., and Oswald Kopf, M. D.

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Pro-Banthine is proving equally effective in the relief of hypermotility of the large and small bowel, certain forms of pylorospasm, pancreatitis and ureteral and bladder spasm. G. D. Searle & Co., Research in the Service of Medicine.

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1. Ruffin, J. M.; Baylin, G. J.; Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, Gastroenterology *23*:252 (Feb.) 1953.

2. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, Gastroenterology *25*:416 (Nov.) 1953.

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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.: J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.: Brit. M. J. 2:755, 1953.

against ROUNDWORMS

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Brown, H. W.: J. Pediat. 45:419, 1954.

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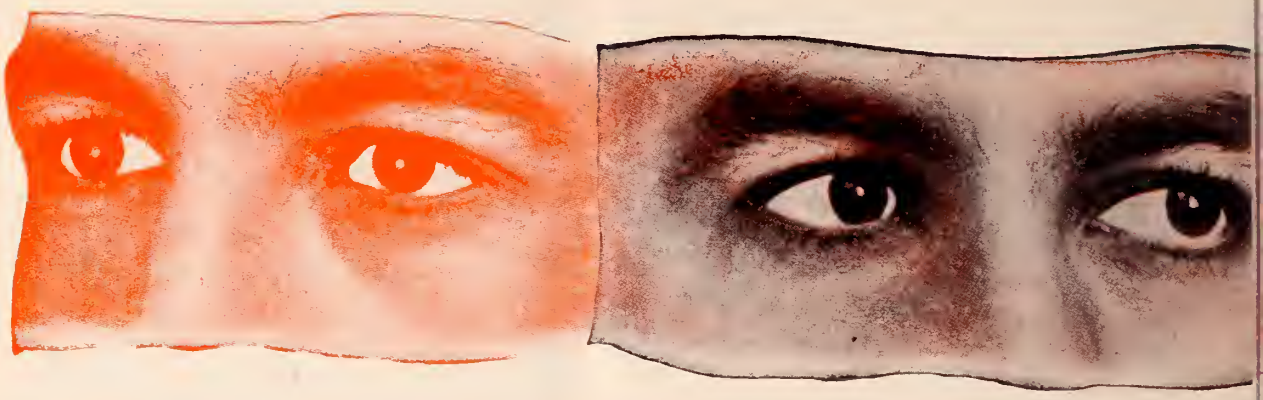
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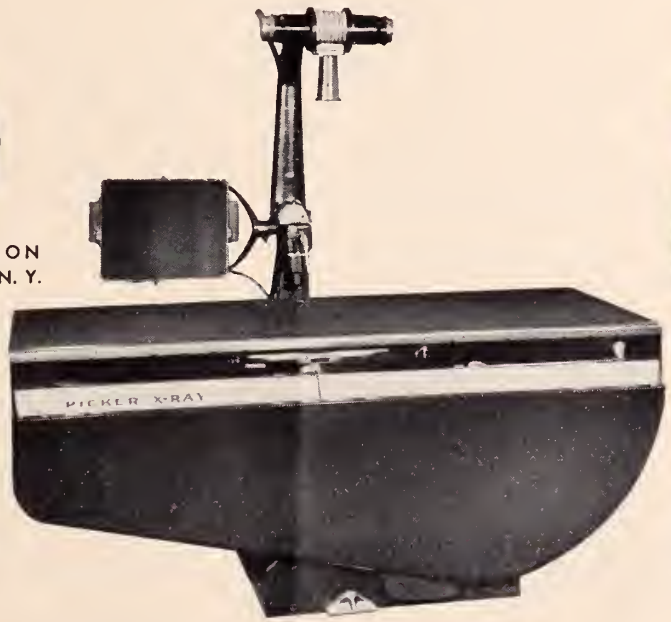
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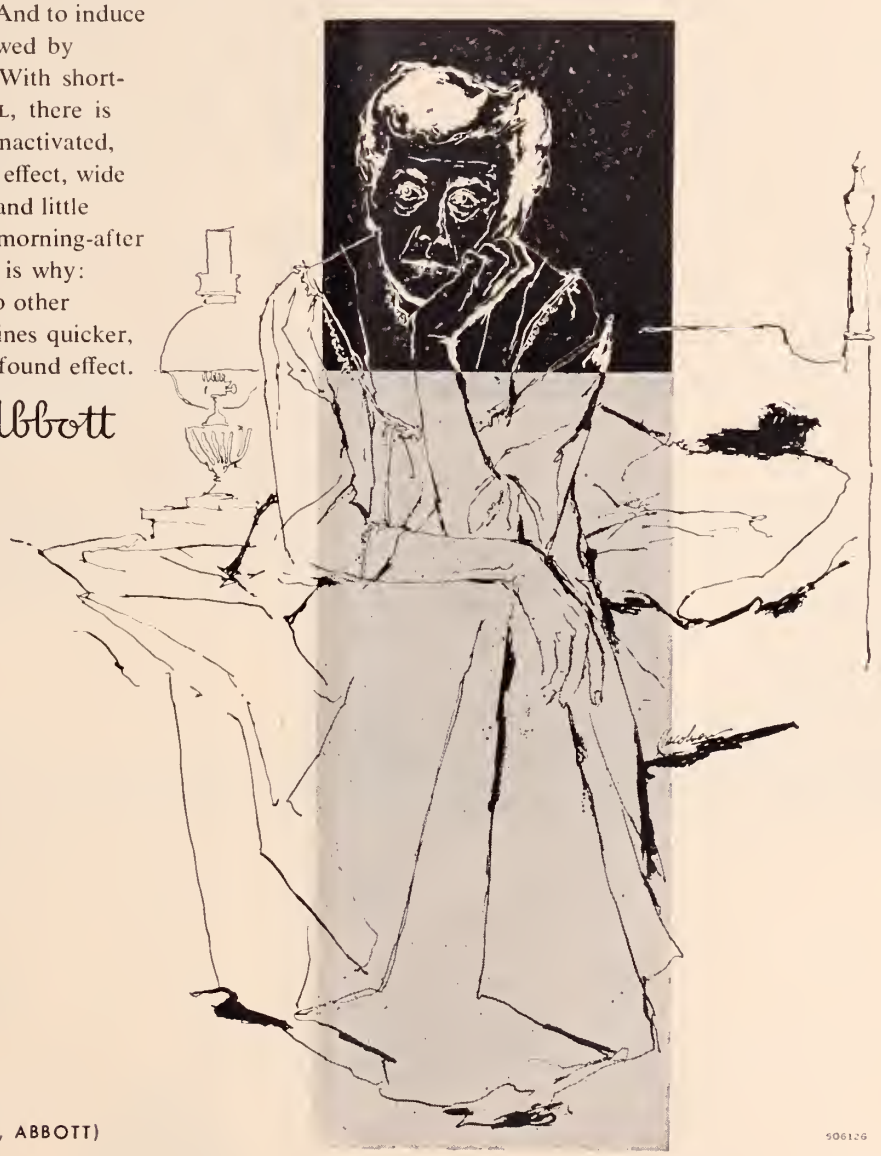
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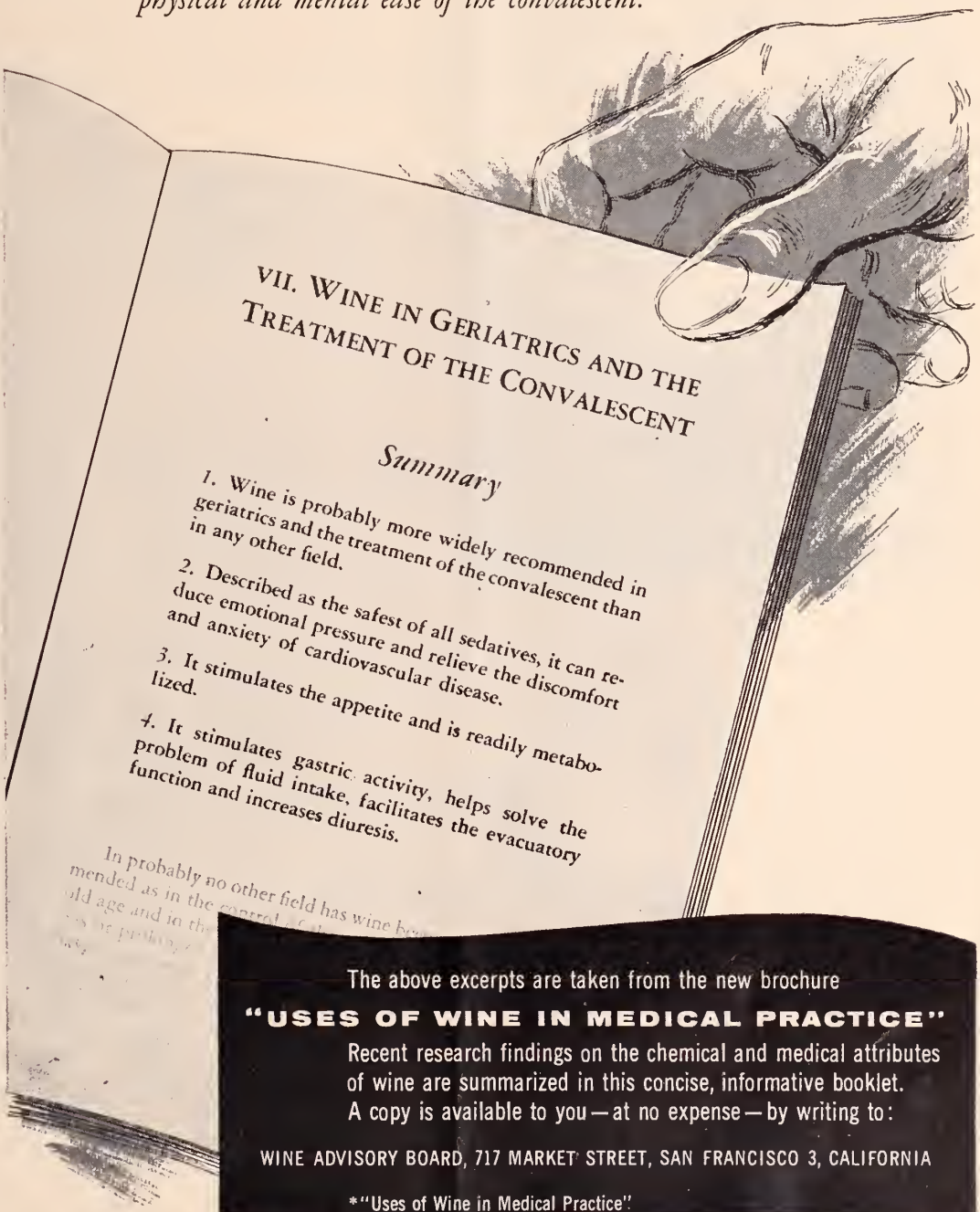
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(1) Payne, R. W.; Shetlor, M. R.; Forr, C. H.; Hellbaum, A. A., and Ishmael, W. K.: J. Lab. & Clin. Med. 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: J. Chron. Dis. 1:168, 1955. (3) Holbrook, W. P.: M. Clin. North America 39:405, 1955.

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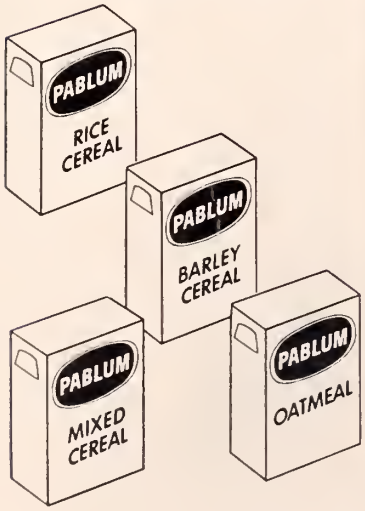


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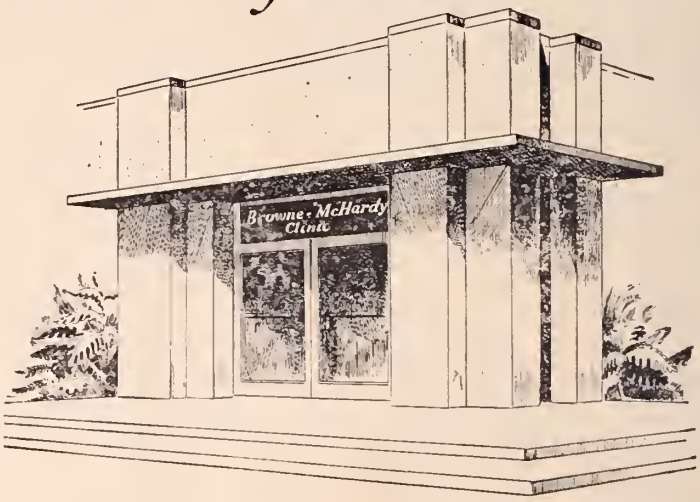
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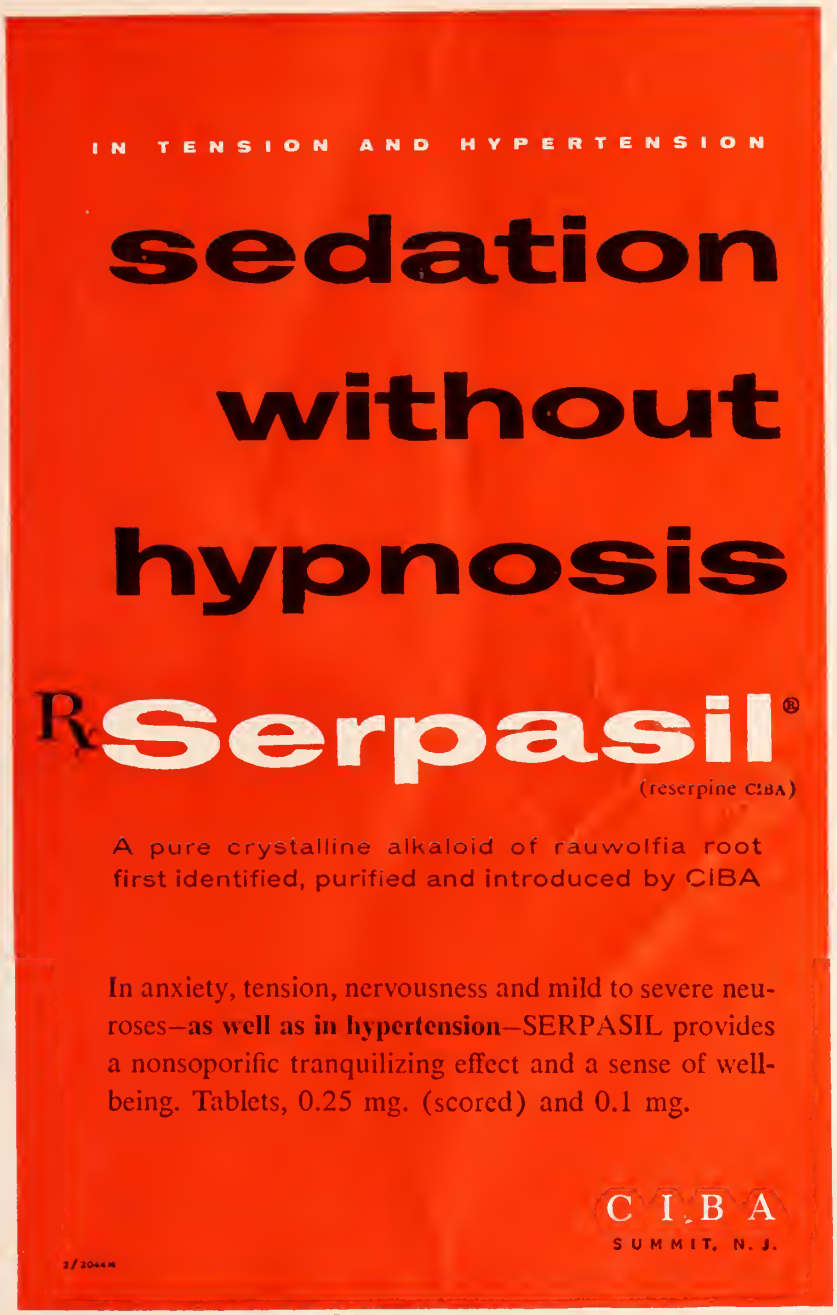
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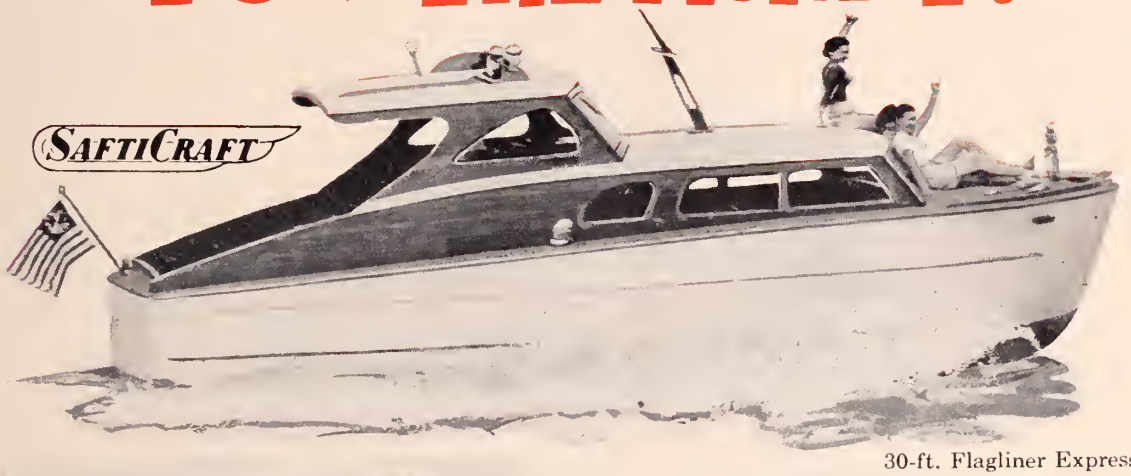
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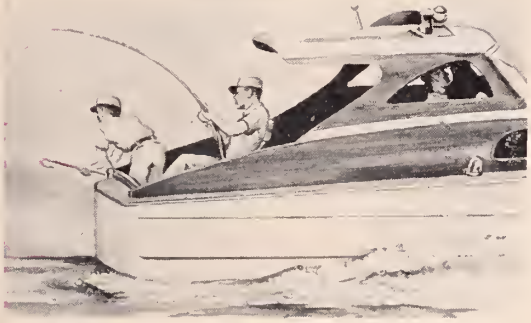
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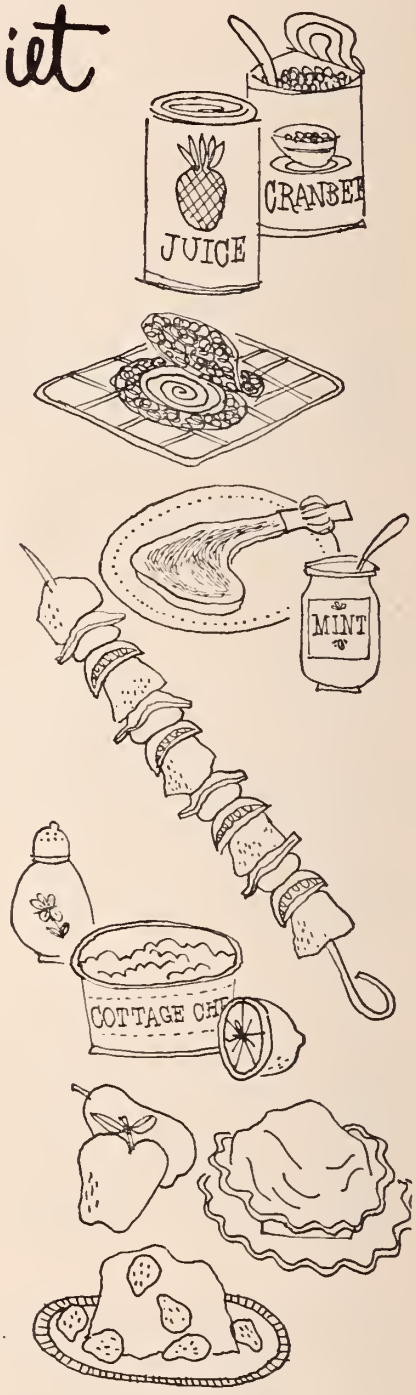
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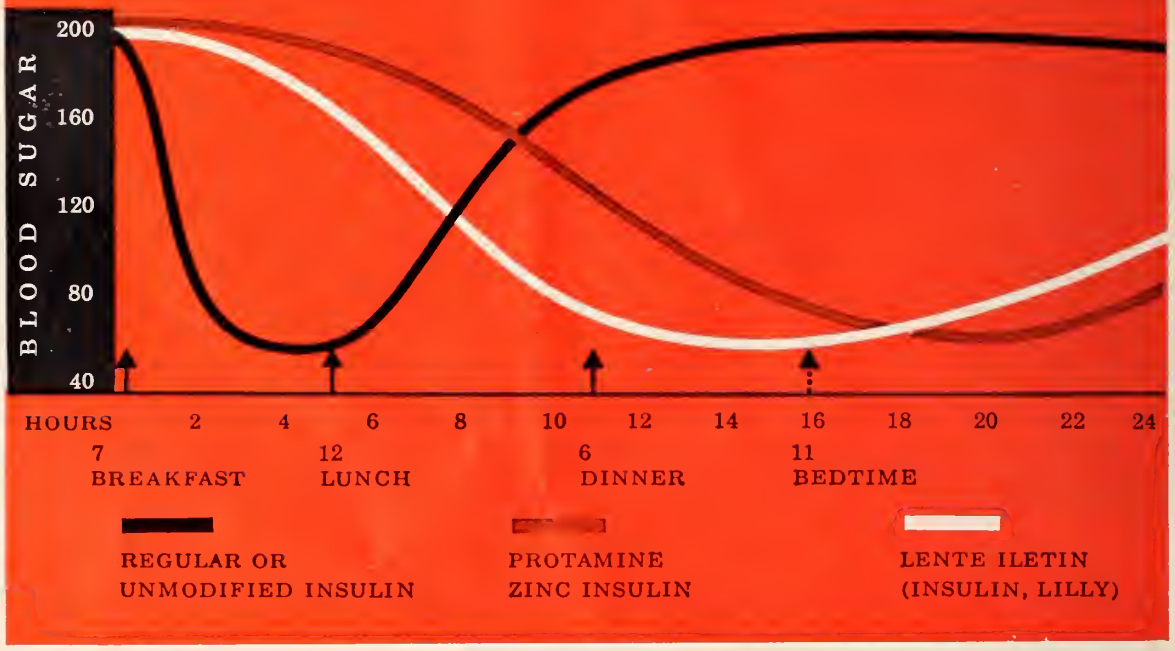
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INTRATHORACIC DISORDERS PRODUCED BY CALCIFIED LYMPH NODES *

MORTON M. ZISKIND, M. D. †
NEW ORLEANS

Most of the intrathoracic organs are vulnerable to injury by calcified lymph nodes. Intimate anatomical relationships between both sets of structures are responsible for the damage which may occur. The aim of this presentation is to briefly describe some of the patterns of disease produced within the chest by calcified nodes.

PATHOGENESIS

Calcified lymph nodes usually represent residua of healed tuberculosis infection. However, in certain areas, such as in the Mississippi River Valley, histoplasmosis is the most common cause of such calcification. That healed tuberculosis processes can produce the clinical patterns to be described here has been established.[1] It also seems certain that healed histoplasmosis can produce the same changes although definite evidence of such sequences remains scanty.[2]

In all instances in which calcified lymph nodes produce disease, the parent condition, tuberculosis or histoplasmosis, has previously broken through the capsule of the node and invaded or invested the neighboring organ. Local and general defenses then confine the inflammatory process and the infection subsides and heals by scarring and by calcification of the necrotic zones. Reactivation of the original disease is possible but it is uncommon; it is more likely to occur in the bulky lesions which produce thrombosis of the superior vena cava than in the smaller deposits responsible for broncholithiasis. Once the integrity of the neighboring organ has been altered by the original disease, progressive injury can occur without active specific infection. The normal respiratory movements favor further penetration of the damaged organ; nonspecific inflammation may also play a part.

BRONCHOLITHIASIS

The common sites for bronchial penetration and perforation by the calcific nuclei of adherent lymph nodes are the angles formed by the origins of the middle lobe bronchus, the most common location, and the anterior segmental bronchi of the upper lobes. Lymph nodes are constantly present in these positions and are important drainage points in primary pulmonary tuberculosis and other pulmonary infections which heal with calcification. The association of lymph nodes with other bronchial segments is inconstant and they are infrequently involved by broncholithiasis. The small caliber of the middle lobe and segmental bronchi predisposes them to bronchial obstruction. Although penetration and perforation of lobar and main bronchi and even the trachea by broncholiths may occur, obstruction is rare be-

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* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 3, 1955.

† From the Department of Medicine, Tulane University of Louisiana School of Medicine; the Veterans Administration Hospital, New Orleans; and Charity Hospital of Louisiana, New Orleans.

cause of the large caliber of the affected tubes.

The wandering stone may lodge within the wall of a small bronchus and provoke an inflammatory reaction which narrows the lumen. It frequently continues to move until it perforates the bronchus and enters the lumen. It may be expectorated from this site or may persist there obstructing the bronchus.

Symptoms are mainly due to bronchial irritation and ulceration and pulmonary and pleural infection. Coughing is chronically present and usually produces sputum which contains pus; foul odor of the sputum which is occasionally noted depends upon the presence of retained anaerobic bacteria. Almost all of the patients have noted blood-streaked sputum on some occasion; massive hemoptysis is common and often precedes the expectoration of a broncholith.

Infection distal to the point of obstruction will vary in severity. In a sizeable proportion of cases, symptoms related to infection may be minimal or absent. When acute inflammation of the obstructed portion of lung does develop, fever, expectoration of pus and chest pain are almost invariably present. The amount of pus and sputum expectorated depends upon the degree of obstruction. Once pulmonary infection is established, areas of suppuration and necrosis usually develop. The patient may suffer from recurrent attacks of pneumonia but these are often imposed upon pre-existent abscesses or bronchiectases. Since the entire obstructed area is infected, pleural involvement is always present.

The pleural changes range from superficial inflammation through effusion to empyema. When empyema occurs, it is often encapsulated by pre-existing adhesions. When total empyema develops, it is usually a pyopneumothorax which follows rupture of a lung abscess.

A presumptive diagnosis of broncholithiasis depends upon the demonstration of a calcified lymph node at the root of a contracted pulmonary segment or the middle lobe. This principle does not hold for other contracted lobes where such an association is usually coincidental. The diagnosis is further supported by long duration of symptoms and old chest x-ray films which show that the changes have been present for several years.

Suspects should be specifically questioned concerning the expectoration of fragments of calcium; a positive response makes the diagnosis secure. Generally, however, the diagnosis is established at bronchoscopy or by thoracotomy. Expert bronchoscopic examination is required because the segmental calcifications are difficult to reach and are often covered with inflammatory tissue.

Some of the patients may be permanently relieved by expectoration or bronchoscopic removal of a calculus if no other significant fragments are retained. Pulmonary and pleural suppuration or recurrent hemorrhages must be treated without delay by surgical means. Although symptoms are absent or mild, thoracotomy will be required where the diagnosis of broncholithiasis cannot be established and the possibility of cancer cannot be excluded.

Since this condition is not malignant, the prognosis is excellent after satisfactory surgical treatment. Prophylactic surgery is not advised for the asymptomatic patient because the risk of the quiet disease is small while the operative procedure is often difficult and extensive.

EFFECTS UPON ESOPHAGUS

The carinal lymph nodes are closely related to the anterior surface of the esophagus. The nodes extending along the intermediate portions of the major bronchi easily reach the esophagus when they are enlarged. These relationships are the anatomical basis for the involvement of the esophagus by calcified nodes.

The underlying disease is again healed tuberculous lymphadenitis. Originally the caseating process broke through the capsule of the node and became adherent to viscus. Invasion of the esophageal wall

occurred which healed by scarring and calcification.[3]

The most common complication of this structural change is the formation of a traction diverticulum. This is rarely symptomatic because the pouch is pulled cephalad and does not retain food. The diverticulum occurs most frequently just below the carina but it is often encountered at lower levels and its association with broncholithiasis of the middle lobe is not uncommon.[4]

The formation of an acquired esophagobronchial fistula is favored by the proximity of the nodes and these structures. A small fistula of this type will often be difficult to recognize.[5] The patient may not complain of dysphagia but careful observation often demonstrates coughing after fluids are swallowed. Other diagnostic measures may be required: bronchoscopic examination while methylene blue is instilled into the esophagus; fluoroscopic examination in various position with lipiodol in the esophagus.

Successful management of esophagobronchial fistula requires surgical treatment of both diseased organs. Resection of the fistulous tract will be necessary. Where suppuration has occurred distal to the damaged bronchus, the diseased portion of lung must be removed.

Cicatricial stenosis of the esophagus is rarely produced by calcific lymph nodes. It occurs at the level of the carinal lymph nodes and produces severe dysphagia and weight loss. It can be successfully treated by subtotal esophagectomy with intrathoracic esophago-gastric anastomosis.

EFFECTS ON SUPERIOR VENA CAVA

The right paratracheal lymph nodes are situated behind the superior vena cava near its junction with the azygos vein. Although neoplastic involvement of these nodes is the most common cause of obstruction of the superior vena cava, healed calcified tuberculous nodes sometimes produce the same effect. The syndrome is characteristic with swelling and cyanosis of the head, neck and upper extremities. Prominent collateral veins quickly appear and are more extensive if the azygos vein is also occluded.

Since the vein is usually thrombosed, surgery offers little in this condition. The natural development of collateral circulation and some degree of recanalization will produce improvement unless propagation of the thrombus takes place. However, if both the cava and the azygos vein are thrombosed, natural processes of relief are slow and incomplete. Klassen et al.,[6] have reported such a case where substantial improvement was obtained by connecting the patent portion of the azygos vein with the superior vena cava below the point of obstruction by means of a Blakemore tube.

EFFECTS ON PULMONARY BLOOD VESSELS

The lymph nodes associated with the larger and segmental bronchi are also closely associated with the pulmonary arteries and veins. The bronchi and blood vessels are often matted together by scar and calcific material after the healing of tuberculous lymphadenitis. This structural distortion frequently leads to surgical difficulties to be described later. In some instances calcific or anthracotic nodes may erode a neighboring blood vessel. If the bronchus is also perforated, fatal hemorrhage through a broncho-vascular fistula occurs.

EFFECTS ON INTRATHORACIC NERVES

Intrathoracic nerve involvement by calcified lymph nodes is rare but a number of cases have been reported by Arnstein.[7] As would be expected on anatomical grounds, the left recurrent nerve which is in close relationship to the left paratracheal nodes is most frequently injured. The phrenic and vagus nerves may be involved.

SPECIAL SURGICAL CONSIDERATIONS

Calcified lymph nodes are the residua of a healed inflammatory process which once set up an intense lymphadenitis and periadenitis. Although active inflammation is no longer present, the bronchi and associated blood vessels are matted together and difficult to separate. In cases where the periadenitis was extensive, a hard almost stony sheath of calcified con-

nective tissue invests the bronchi and neighboring structures and creates very difficult surgical problems.

The periadenitis makes it impossible to cleanly dissect the root structures of involved portion of lung. In fact, such a dissection is dangerous and frequently leads to massive hemorrhage which can only be controlled by ligation of the main pulmonary artery and pneumonectomy. Resection of diseased lung distal to the frozen root is inadvisable because the perforating calculus is left in situ and predisposes to repeated hemorrhage. These features make it necessary to perform relatively extensive resections for broncholithiasis. It is generally necessary to remove a lobe for the relief of segmental disease. The problem of middle lobe broncholithiasis is best solved by the resection of both the middle and the right lower lobes.

Even this last procedure will be extremely difficult when there is extensive lymph node involvement along the intermediate bronchus. If it is impossible to identify the pulmonary vessels within the fused peribronchial structures, the operator will be unable to divide the bronchus at the optimum level and will be compelled to leave a long stump which will predispose to suppuration.

The surgeon operating for broncholithiasis must remember that traction diverticula of the esophagus may also be present.[7] Failure to rule out that complication may lead to inadvertent esophageal injury during pulmonary resection.

Calcified lymph nodes at the lung root may embarass the surgeon during lobectomy for diseases other than broncholithiasis. If the blood vessels at the hilus are matted together by densely scarred and calcified tissue it may be impossible to carry out a planned lobectomy. In one recent case of left lower lobe tuberculosis, pneumonectomy was necessary because the vessels at the lung root could not be separated from the investing sheath of old inflammatory tissue.

SUMMARY

1. The relationship of calcified intrathoracic lymph nodes to tuberculous lymphadenitis and histoplasmosis has been briefly discussed.

2. The anatomical conditions favoring injury of most of the intrathoracic organs by calcified lymph nodes have been presented.

3. The clinical consequences of involvement of the smaller bronchi, esophagus, and intrathoracic blood vessels by calcified nodes have been listed.

4. The surgery of broncholithiasis has been discussed. The difficulties produced by healed periadenitis in pulmonary resection for this disease have been emphasized.

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CHEMICAL BURNS OF THE VAGINA *

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Chemical agents in the form of tablets or solutions are commonly used by many women in an attempt to produce abortions,[1, 2] or as antiseptic cleansing douches. These agents may, on contact with the vaginal mucosa, produce severe burns with

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TABLE 1
TOTAL ADMISSIONS AND RACE INCIDENCE

Year	Total Hospital Admissions		Chemical Burns Admissions	
July-July	Colored	White	Colored	White
1949-1950	41,765 (65%)	23,377 (35%)	5	1
1950-1951	42,045 (67%)	21,414 (33%)	18	2
1951-1952	42,656 (66%)	20,056 (34%)	17	1
1952-1953	44,934 (67%)	20,355 (33%)	21	1
1953-1954	46,469 (70%)	19,920 (30%)	8	1
Totals	217,869 (67.5%)	105,122 (32.5%)	69 (92%)	6 (8%)

resultant hemorrhage and all the sequelae that may ensue.

Many forms of abortifacients have achieved eras of popularity, only to be condemned with the passage of time.

In 1950, Davis [1] reported a series of 2,665 abortions, of which 90 per cent were probably induced. The popular abortifacients were pastes and fluids injected into the uterine cavity. The mortality rate was 0.26 per cent. The deaths were caused by soap bubble emboli and sepsis. There were 4 cases of traumatic rupture of the uterus. The most common complication was gross infection.

In the same year as Davis's report, Dutra [2] reported an investigation of 7 cases with 4 deaths. The abortive agent was an intrauterine paste. Analysis of the paste revealed: soft soap, small quantities of iodine and various aromatic substances such as pine oil or thymol. Intravenous administration of the paste killed laboratory animals instantly. Subcutaneous injection led to necrosis of the skin similar to the necrosis seen in the uterine wall. When the pastes were used as abortifacients on humans, they had the following complications: prompt death from intravenous injection, severe acute or delayed hemorrhage, necrosis and perforation of the uterus, local and widespread inflammatory disease, and delayed effects such as sterility and fibrous peritoneal adhesions.

The following series of 75 cases of chemical burns of the vagina were treated at Charity Hospital as inpatients during the five year period, July 1949 to July 1954. The race incidence was 69 colored (92 per cent) and 6 white (8 per cent). (Table 1). An untold number of chemical burns of the vagina, with less serious complications, were treated on an outpatient basis.

The average age was 26 years, the youngest was 17 years and the oldest was 45 years. In the colored patients, parity varied from 0 to 12, with 88 per cent having 4 or more living children. In the white patients, parity varied from 4 to 8, with 100 per cent having 4 or more living children. (Table 2).

TABLE 2
PARITY

Para 0	Para I	Para II	Para III	Above III
6	10	18	11	30

The majority of the patients, 56 cases (74.7 per cent) admitted using the agents in an attempt to produce abortions. (Table 3). In 3 of these cases, tablets were inserted into the vagina in conjunction with intrauterine catheters and vaginal packs by midwives. These 3 cases, when first seen, showed evidence of pelvic infection.

TABLE 3

Agents Used	No. of Cases	Attempted Abortions
$KMnO_4$ Tablets	52 (69.3%)	52 (69.3%)
$KMnO_4$ Douche	21 (28. %)	3 (3.9%)
Orange Blossom Supp.	1 (1.3%)	0
Mercuric Chloride Tab.	1 (1.3%)	1 (1.3%)
Total	75 (100%)	56 (74.5%)

Seventy-three cases (97.3 per cent) were the result of the use of potassium permanganate tablets or crystals. In 52 of the cases, the tablets were inserted into the vagina as abortifacients. In 21 cases the tablets or crystals were incompletely dissolved in water in the preparation of

douche solutions and the undissolved particles resulted in vaginal burns.

Potassium permanganate is a compound that readily yields oxygen. It is an irritant to mucosa and should not be used in concentrations less than 1:1,000. Potassium permanganate has been a common constituent of oral abortifacient pills for many years.[3]

One case (1.3 per cent) was the result of "Orange Blossom suppositories". This patient apparently was treating a vaginal discharge. Bleeding occured three days after the insertion of the suppositories. Vaginal examination revealed multiple raw bleeding areas 1 to 2 cms. in diameter.

Orange Blossom suppositories consist of alum, borax, and petrolatum. They are recommended for: "simple irritations of the vaginal tract".

In the remaining case (1.3 per cent), tablets of mercuric chloride were used. This patient admitted using the tablets as an abortifacient.

Mercury poisoning may produce local lesions. The systemic effects depend on the amount of absorption. It may produce nephritis, colitis, and inflammation at the point of absorption. The mortality, without prompt treatment, may run over 40 per cent.

In the group of 56 patients who admitted using the agents as abortifacients, 5 cases were diagnosed as not pregnant on admission. Six patients were pregnant on admission and did not abort, but they did not return to Charity Hospital for follow up (Table 4). There were 45 cases

TABLE 4
END RESULTS OF ATTEMPTED ABORTIONS
(56 CASES)

Abortifacients	Abortions	Not Pregnant	Pregnant, No Follow-Up	Live Births	Stillbirths
$KMnO_4$ Tablets	4	5	5	37	1
$KMnO_4$ Douche	1	0	0	1	1
$HgCl_2$ Tablets	0	0	1	0	0
Total	5	5	6	38	2

of proven pregnancies which were followed to termination at Charity Hospital. These pregnancies resulted in 38 term live births, 2 stillbirths and 5 abortions.

In the group of 5 that did abort, 3 cases may be attributed to the work of midwives, as they had intrauterine catheters, vaginal packs, and intravaginal permanganate pills. The fourth abortion occurred three months after the insertion of the permanganate tablet. The fifth abortion occurred two hours after the taking of a permanganate douche. Potassium permanganate did not seem to be responsible for any of the abortions in this group.

Vaginal bleeding was present in all 75 cases. (Table 5). In 74 cases the bleeding occurred within thirty minutes to six hours after the insertion of the tablets or douching. In the case of the Orange Blossom suppositories, bleeding occurred three days later. Most of the bleeding could be termed moderate, although some of the cases had severe vaginal hemorrhage. Twenty-nine of the cases were in a state of clinical shock on admission. The average time between onset of bleeding and examination by the physician was twelve hours. When first examined, 55 of the patients exhibited active bleeding. Chills, fever, and signs of pelvic infection were manifested by the 3 patients who had visited midwives. Pain was a symptom in only 1 case, the mercuric chloride case.

TABLE 5
SIGNS AND SYMPTOMS

Agent	Pain	Onset of Bleeding	Clinical Shock	Chills & Fever	Escharotic Ulcer
$KMnO_4$ Tablets	0	30 min.-6 hours	15	3	52
$KMnO_4$ Douche	0	30 min.-6 hours	14	0	21
Orange Bl. Supp.	0	3 days	0	0	0
$HgCl_2$ Tablets	1	1 hour	0	0	1
Total	1	30 min.-3 days	29	3	74

On physical examination, escharotic lesions were present in 74 cases (98.7 per cent). These ulcers were typical of caustic burns.

In 73 cases (97.4 per cent) the lesions resulted from the use of permanganate. These ulcers presented a clean, granular, red base with punched out appearance

and blackened raised margins. Frequently, eroded vessels were found actively bleeding from the margins of these ulcers.

In the case of the burns due to mercuric chloride tablets, the ulceration was greyish white with a dirty appearing base, and without the typical raised blackened margins of the permanganate burns.

Most of the lesions were in the upper half of the vagina. The fornices usually presented kissing lesions with both vaginal and cervical burns.

Hematocrit determinations varied from 18 mm. to 41 mm., the average being 26 mm. The case of mercuric poisoning had normal blood chemistries and urinalyses during her seven days of hospital stay.

The treatment consisted of hemostasis, blood replacement, antibiotics, and antitoxins. Hemostasis was accomplished by sutures in 25 cases. Suturing was impossible in 5 cases, due to the extensive necrosis, and vaginal packs were used to control the hemorrhage. Iodoform vaginal packs alone were used to control the bleeding in 45 cases. Transfusion was required in 59 cases. Fifty-three patients received from 500 to 1500 cc. whole blood. Six patients received from 1500 to 3500 cc, whole blood. Thirty-two patients received antibiotics. Tetanus and gas gangrene antisera were administered to 18 patients. The 3 patients with pelvic infection were treated with nasogastric suction and intravenous fluids in addition to the above forms of treatment. Seventy-three of the patients were treated in the treatment rooms and on the wards. Two patients were taken to surgery where dilatation and curettment of the uterus was done along with suturing of the vaginal bleeding points. These two were not pregnant.

Iodoform gauze vaginal packs were the type used in these cases. "Iodoform gauze packs have been known to produce caustic burns of the vagina".[11] No definite complications were attributed to the use of iodoform in this series.

There were no deaths in this series. One of the cases of pelvic infection developed phlebothrombosis in the lower extremities, which was treated with superficial femoral vein ligation. Later sequelae in the cases followed were 4 cases of banding scars with stenosis of the upper one-third of the vagina.

The hospital stay varied from one to eighteen days. Fifty-three (70.7 per cent) of the patients were in the hospital three days or less. The remaining 22 (29.3 per cent) were hospitalized from four to eighteen days. The average hospital stay was 2.7 days.

CASE REPORTS

The case of mercuric chloride and one of the cases of potassium permanganate burns are presented.

1. *Case No. 22*, L. S., thirty-five year old white woman, gravida vi, para iii, abortus iii. Admitted November 23, 1950. Her LMP was in July 1950. The patient admitted placing a mercuric chloride tablet in the vagina at 2:00 A.M. on the day of admission, "in an attempt to abort herself". One hour later her teeth, gums, and vagina began to ache and burn. Physical examination was essentially normal except for the pelvic findings. The uterus contained a four months' gestation. The posterior lip of the cervix revealed ulceration that was greyish white with a dirty appearing base. The cervical lesion was not bleeding enough to require any local treatment. The patient was admitted for observation. The blood chemistries, urinalyses, and urinary output remained normal. She was discharged on her seventh hospital day.

The patient was seen in the clinic a month later and was described as a normal five months pregnancy. She did not return to Charity Hospital for further follow-up.

2. *Case No. 60*, J. A., twenty-nine year old colored woman, gravida iv, para iv, abortus 0. She was admitted to the hospital on October 29, 1952. Her LMP had been on September 19, 1952. She gave the history of "inserting 2 potash tablets in the vagina in an attempt to produce an abortion last P.M.". Vaginal bleeding became profuse a few hours later and she was brought to the hospital per ambulance.

On admission her pulse rate was 108 and blood pressure was 70/40. Her skin was cold and clammy. Pelvic examination revealed the uterus to be six weeks pregnant. The anterior lip of the cervix and the anterior, right and posterior fornices presented blackened, burned out eschars approximately 2 by 3 cms. that were actively bleeding. The vagina was packed and blood transfusion was started. She was transferred from the admitting room to the ward, where she received a total of 3000 cc. blood. She also received penicillin, streptomycin and stilbesterol. Hematocrit (after more than 1500 cc. blood) was 34. She was

discharged on her fifth hospital day and was followed in the OB clinic. On June 21, 1953, she had a normal spontaneous delivery of a normal 7 pound 12 ounce male infant.

DISCUSSION

Potassium permanganate is becoming popular among the uneducated and malinformed as an abortifacient. These people are impressed with the promptness and the certainty of the vaginal bleeding. To these patients, seeing vaginal blood and menstruation are synonymous. However, their contentment changes to frustration, and the gestation continues undisturbed. This fad is not limited to this area, as evidenced by another observer.[5] When potassium permanganate is used as an antiseptic solution, it should be properly diluted and allowed to form a solution. The undissolved particles may produce caustic burns.

The treatment, as outlined in this series, has been satisfactory. The use of iodoform gauze packs, however, cannot be recommended. The side reactions to this preparation could produce additional harm[6]. Plain gauze vaginal packs would produce the same hemostatic effect.

The two abortions that were not attributed to midwives fall well within the incidence of all pregnancies that end in spontaneous abortion.[7]

SUMMARY AND CONCLUSIONS

A series of 75 cases of chemical burns of the vagina have been presented. Fifty-six of the patients admitted using the agents as abortifacients. The remaining 19 patients used the agents for cleanliness.

The outstanding symptom was vaginal bleeding. Ulcerative vaginal lesions responsible for the bleeding were present in all cases. The typical eschar resulting from caustic agents has been described.

The treatment consisted of hemostasis, blood transfusion, mixed sera, and antibiotics.

The intravaginal use of potassium permanganate is ineffective as an abortifacient. Its use as a cleansing douche may produce serious vaginal burns if any undissolved crystals come in contact with the vaginal mucosa.

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THE USE OF A NEW DRUG, ACRIZANE CHLORIDE, FOR THE TREATMENT OF YEAST VAGINITIS *

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Acrizane chloride is Abbott Laboratories' trademark for phenacridane chloride. It has a chemical formula 9-p-hexyloxyphenyl-10-methylacridinium chloride. Because of its fungicidal activity and diffusibility in high titer, acrizane chloride appears to hold promise for effective treatment of certain fungous infections, including those of the vaginal tract, scalp, skin, and nails. The potential effectiveness of acrizane chloride against the fungus most commonly seen in the vaginal tract may be judged from in vitro tests[1] in which a concentration of only 5 mcg. per ml. inhibited the growth of *Candida albicans*. Killing effects were obtained within fifteen minutes or less on *Candida albicans* in dilutions of 1:20,000. The

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penetrative capacity of Acrizane Chloride has been noted both grossly and microscopically. This property is believed to be of considerable importance in the treatment of fungous diseases. Acrizane chloride has been shown to be nonirritating and highly effective as a germicide. It showed marked bacteriostatic and bactericidal potency against a number of gram negative and gram positive organisms, both in vitro [2] and in vivo.[3-5]

Little is known of the fate of the drug. None was found in the urine of dogs receiving 20 mg./Kg. orally for four days. After intravenous administration acrizane chloride appeared briefly in the urine. From one half to two and a half hours after administration the urine showed 16 mcg./cc. The dose was 30.5 mg., so that the drug found was less than 0.2 per cent of that administered. None was found in the blood or bile, although there was hemolysis of the blood as evidence of its presence.

Acrizane chloride vaginal cream is supplied in a 1:200 concentration (0.5 per cent) in a vanishing cream type base containing diglycol stearate, propylene glycol, cetyl alcohol, and stearic acid.

The purpose of this paper is to present the results of treatment of monilial vaginitis with acrizane chloride.

A total of 48 patients were seen in private practice with vaginal moniliasis during this study, over a period of twelve months. The diagnosis of monilia was confirmed by the wet slide technic. Nearly all patients complained of at least one or more of the common symptoms of vaginitis, namely discharge, pruritus or burning. Three patients were entirely asymptomatic. Many of the patients showed acute vaginal and cervical inflammation.

All of the patients treated in this series were placed on a similar regime in which acrizane chloride cream was inserted vaginally by the use of a plastic applicator, either in the office by the physician, or at home by the patient. Home treatment consisted of one vaginal application each night, and then a douche with soda upon arising. This treatment was carried out daily through at least one menstrual cycle, with office examination and treatment once weekly. The patient was instructed to be extra diligent in carrying out the regime, especially in the premenstrual and postmenstrual phase, and also to continue the insertion of the cream vaginally throughout the time she was menstruating. Approximately five days after her menses all treatment was stopped, including douches, and vaginal smears were checked three days later. If the smear was negative she was continued on a modified regime, using the vaginal cream three times weekly through her next menstrual period. Vaginal smear was repeated after the second menstrual period. After obtaining two consecutive negative smears she was considered clinically and microscopically cured.

Ten of the 48 patients failed to return for further treatment or follow-up smears after the initial diagnosis was made, and treatment prescribed. The majority of these cases were patients from districts outlying New Orleans for whom it was difficult and inconvenient to come in for frequent treatment. Practically all of these had mild symptoms, and 2 were completely asymptomatic. Therefore, these 10 cases have been discarded from the statistical analysis of the series.

Of the 38 cases treated, 28, or 73.7 per cent, showed complete cure as manifested by remission of symptoms and negative smears following treatment through one or more menstrual cycles. Seven patients, or 18.4 per cent of the total, manifested definite clinical improvement when seen in the office on follow-up visits. Most of these patients failed to return to the office for more than one or two visits, and were not followed through a complete cycle of treatment. One of these moved away from New Orleans before finishing the complete course of treatment. Although no smears were obtained for laboratory confirmation of cure, it is believed that these also would have shown complete cure if they had returned.

In 2 cases, or 5.3 per cent of the total, no cure was obtained as evidenced by re-

peatedly positive smears while under continuous treatment. One was a single white female whose symptoms were moderate when first seen, and subsided almost completely on treatment with acrizane chloride. However, repeated slides were persistently positive. The treatment was then combined with gentian violet therapy at the office, and on this regime cure was obtained. The other case was a married parous white female, who had been previously treated by other means of therapy, and returned with a re-infection of yeast vaginitis. She was placed on acrizane chloride treatment, but returned at rather infrequent intervals for follow-up, and became pregnant during this time. She is asymptomatic at present on home therapy.

In 1 additional patient, or 2.6 per cent of the total, treatment with acrizane chloride vaginal cream had to be discontinued due to an exacerbation of the vaginal symptoms and an acute febrile reaction with an elevation of temperature to 102 degrees Fahrenheit. This patient inserted the cream vaginally on two successive nights, with exacerbation of symptoms becoming more marked after the second treatment. These symptoms completely subsided after cessation of the use of the cream and douching with soda. She had been treated with gentian violet vaginally three days before beginning the use of acrizane chloride, and the possibility of sensitivity to gentian violet was entertained also. However, she had previously been treated with gentian violet prior to this episode, and was also treated with it subsequently with no untoward reaction. Hence, the possibility of sensitivity to gentian violet was ruled out, and it must be assumed that the exacerbation and febrile reaction were due to the use of acrizane chloride. This patient has a long history of allergy to numerous other drugs in the past, and so the occurrence of a reaction in such a patient is more probable than in the average person. This was the only sensitivity or toxic reaction noted among all the 38 cases in which this drug was administered.

In this series there were 7 pregnant patients. In 5 of these the diagnosis of yeast vaginitis was made at the initial visit when the diagnosis of pregnancy was substantiated. One of these 5 is the previously mentioned patient who was treated for a re-infection with yeast vaginitis which failed to respond to treatment with acrizane chloride. Three of the other 4 had moderate to acute vaginal symptoms which responded very satisfactorily to acrizane chloride therapy. The fourth case was completely asymptomatic. In 1 patient the symptoms of yeast vaginitis occurred later in pregnancy, and responded quickly to acrizane chloride treatment. In the remaining case the patient failed to return for treatment or prenatal care after the diagnosis of yeast vaginitis was made. None of the pregnant cases were permitted to use vaginal cream at home after the beginning of the third trimester, and rarely was office therapy indicated. It cannot be too strongly emphasized that vaginal treatment must not be undertaken by the patient herself in the last trimester of pregnancy.

Of the 28 patients in whom cure was obtained with the use of acrizane chloride, 4 returned at a later date with a re-infection. These varied in time of onset following the previous last reported negative smear from five weeks to six months. At least one of these patients had received antibiotic therapy in the interim for the treatment of an acute cystitis. Treatment of these cases with re-infection consisted of the application of gentian violet vaginally at the office, and the use of acrizane chloride for home therapy. All these responded quickly and very satisfactorily to the treatment. One of the 4, however, exhibited a sensitivity reaction to gentian violet, and the use of this was discontinued and acrizane chloride alone was administered. Following this therapy remission of the symptoms and negative smears were obtained.

The use of acrizane chloride vaginal cream was well accepted by all patients. A very minimal number, approximately 4 or 5 patients, commented that some yellow staining of their clothing and linen

had occurred, but upon further interrogation they stated that it washed out fairly easily, and no permanent staining or damage was reported. All patients were instructed to douche upon arising in the morning which further lessened the occurrence of staining from the vaginal secretion. It is felt that this is a distinct advantage over the application of gentian violet which is accompanied by definite permanent staining in almost every case, and is extremely distasteful to the patient. The possibility of patient sensitivity to gentian violet is also obviated. The necessity of numerous visits to the doctor's office for treatment is also reduced, and better patient cooperation in the use of the medication is usually obtained. The necessity of the patient wearing a vaginal pad constantly is eliminated.

CONCLUSIONS

Phenacridane chloride, or acrizane chloride by its trade name, has been proved by laboratory tests to be a highly fungicidal agent. Clinically it appears to be an efficacious drug in the treatment of yeast vaginitis. All degrees of vaginal moniliasis, from mild to very acute, were encountered in this series. Treatment with acrizane chloride gave prompt and lasting remission of symptoms in the majority of cases. In the average case the drug was well accepted by the patient. The ease of application of the drug makes its use well tolerated, as messy and obnoxious procedures are avoided. No toxicity of any consequence was encountered. Only one mild toxic reaction was seen in a patient known to be allergic to numerous drugs. It was found that this drug could be used in combination with other agents which seemed to augment the treatment in certain cases. Hence, the flexibility and scope of therapy is enhanced. In cases of resistant vaginitis or re-infection the effectiveness of acrizane chloride alone was not as marked. In these cases the combined application of gentian violet by the physician at the office and acrizane chloride by the patient at home gave excellent results. Therefore it is our feeling that this new drug is a specific and valuable agent in the treatment of yeast vaginitis.

1. A new drug, acrizane chloride, has been proved by laboratory tests to be a potent fungicidal agent.

2. A series of 38 cases is reviewed here, using acrizane chloride vaginal cream for the treatment of yeast vaginitis.

3. In 28 cases, or 73.7 per cent, definite cure was obtained by both clinical and laboratory standards.

4. In 7 additional cases, or 18.4 per cent, clinical improvement was manifest, but laboratory confirmation of cure was not obtainable due to failure of the patients to return.

5. In 3 cases, or 7.9 per cent, cure was not obtained by the use of this drug alone, but when combined with other means of treatment cure resulted.

6. In 7 patients the presence of yeast vaginitis was seen during pregnancy. One of these had vaginal moniliasis prior to becoming pregnant. Treatment with acrizane chloride was found to be effective and safe during pregnancy also.

7. No toxicity of any consequence was encountered as a result of the use of this drug.

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DISCUSSION

Dr. George T. Schneider, (New Orleans): It is a pleasure to discuss Dr. Moll's paper before this Society and to learn that we now have another valuable agent in the treatment of vaginal moniliasis. However, I believe it is problematic whether the perfect remedy for moniliasis, and for that matter, trichmoniasis, will ever be found. Every reported series of cases has shown a small percentage of patients in whom monilial resistance is encountered, or sensitivity to the drug develops, as it did in one patient in Dr. Moll's series. That is why the continued discovery of new effective agents in combatting this infection is so important. The same applies, of course, to antibiotic therapy of bacterial infections. There are always resistant strains which develop and require new potent drugs, either singly or in

combination. This was brought out by Dr. Moll when he found it necessary to supplement the acrizane therapy with gentian violet in order to effect a cure in some of his recurrent cases in which partial immunity to the acrizane was apparently developed by the yeast.

Dr. Moll advocates use of soda douches in the morning for cleansing and to help prevent staining of the underclothes. I would like to ask Dr. Moll why he has a preference for soda. This would tend to shift the *p*H of the vagina temporarily toward the alkaline side, where the tendency for monilia to grow is increased.

We know that the normal *p*H of the vagina is between 3.8 and 4.4, which is conducive to the growth of the friendly Doederlein's bacilli. A *p*H of 5 to 6 is favorable for trichomonas, and *Monilia albicans* survives and multiplies at a *p*H of 5.5 to 7.4. This, of course, is the reason why vaginal moniliasis tends to flare up during or after a menstrual period, when the mildly alkaline menstrual blood (*p*H 7.2) tends to shift the vaginal *p*H towards the alkaline side. Dr. Moll emphasized this fact in advocating continuation of acrizane therapy throughout the menstrual period.

Each physician has his own particular preference of douches but it has been our experience, as well as that of others in the last few years, that adding a detergent to the douching agent is advantageous. Detergents, as you know, are cleansing agents which hold foreign matter in suspension or emulsion. Like soap, their cleansing action is due to their ability to lower the surface tension, but unlike soap, they are stable and active in an acid medium. This action makes the cytoplasmic membrane of vaginal organisms more permeable and allows the moniliocidal, trichomonicidal, or bacteriocidal agent more easily to kill the organism. Detergents, such as sodium lauryl sulfate, are in the formula of a number of douche powders, such as trichotine (R), and are in a majority of the household detergents. Phisoderm (R) or phisohex (R), with which you are all familiar and which contains the detergents alkyl aryl sulfonate, has proved, in my experience, to be a great help in eliminating monilial and trichomonas infections when about 3 tablespoonfuls, or enough to make a sudsy solution, is added to the douche water.

One final point that I would like to bring out is in reference to the resistant monilial cases in which recurrence develops as a result of growth foci in the labial and clitoral folds. It should be emphasized that not until these areas have been treated in the office by thorough cleansing and direct application of an effective agent, such as gentian violet, plus the continued external application of propion gel or a similar substance at home will complete cure be obtained. It has been our custom routinely to obtain a smear and culture of cutaneous and clitoral folds for yeast in these cases, and also in other vulval pruritic cases of unknown etiology.

I would like to ask Dr. Moll if he encountered any patients of this type in his series and whether acrizane proved effective and suitable for external vulval application?

Also, does he check the fasting blood sugar of these patients and were any found to have diabetes?

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COMPARISON OF TWO REGIMES FOR THE TREATMENT OF ENTEROBIASIS WITH PIPERAZINE CITRATE *

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The object of this study was to ascertain the efficacy of piperazine citrate for the treatment of patients with pinworm infection through a comparison of two schedules of therapy with this anthelmintic. In previous reports of evaluations of the oral administration of piperazine citrate for the treatment of enterobiasis,[1-4] the dosage usually has been based upon age groups or on weight ranges of 15 to 30 pounds. This has resulted in considerable variation in the relationship of dosage to weight. In the present study, more exact dosage based upon weight of the patient was used.

The usual dosage schedule employed for the treatment of pinworm infection with either gentian violet or piperazine citrate consists of anthelmintic therapy for two alternate weeks (treatment for seven days, rest seven days, treatment for seven days). Brown and Chan [1] have observed that eggs of *Enterobius vermicularis* were demonstrable in Scotch tape anal swabs

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The piperazine citrate (Syrup of Antepar) used in this study was provided by Burroughs Wellcome and Company.

taken on some patients during the seven day rest period. This finding indicates that exposure to autoinfection may occur during treatment with this regime. In the present study this schedule of therapy was compared with a straight fourteen day course of medication. The latter method shortens the period of treatment, eliminates the interruption of medication and possibly reduces autoinfection during therapy.

METHODS

The diagnosis of enterobiasis was based on the demonstration of pinworm eggs on at least one of three Scotch tape anal swabs before treatment. In only one case, in which adult worms were collected and identified, was treatment initiated without preparation of anal swabs. Diagnosis was not based on a history of passage of worms or of an anal pruritus. Evaluation of treatment was based upon examination of 7 Scotch tape swabs, one daily for seven consecutive days starting the day after the completion of therapy. The treatment was considered a failure if pinworm eggs were demonstrable on any of the 7 Scotch tape swabs.

The drug product used in this study was an orange-flavored syrup which contained piperazine citrate in an amount equivalent to 100 mg. of piperazine hexahydrate per cc. (Syrup of Antepar). The daily dosage was 30 to 35 mg. per pound of body weight divided in two equal doses. The maximum daily dose was 2 gm. (20 cc.). Patients who weighed 66 or more pounds received the maximum dosage. The drug was measured by cc. in graduated paper cups. This eliminated the variation in dosage which occurs when teaspoons are employed for measuring and dispensing the drug. Adult patients or parents of treated children were interrogated to determine if untoward reactions occurred during the course of therapy.

RESULTS

The results of this study are summarized in Table 1. The infection was eliminated in 26 of the 27 patients who received piperazine citrate for two alternate weeks. Ninety-six per cent of the patients in this group were treated successfully. The patient who was treated unsuccessfully received 29 mg. of the drug per pound. Retreatment with this same schedule and dosage was effective. One patient in this series complained of vomiting which was probably related to the development of measles during therapy. One other patient reported mild abdominal cramps.

Pinworm infection was eliminated in 30 of the 33 cases who received medication for fourteen consecutive days. In this series 91 per cent of the patients were treated successfully. Two of the 3 patients whose infections were not eliminated received 34 mg. of drug per pound daily; the dosage for the remaining case was 21 mg. per pound. Complaints were registered by 3 patients in this group. Two

TABLE 1

	Regime I	Regime II
Total daily dosage	Computed on a basis of 30 to 35 mg. per lb. up to a maximum of 2.0 gm. (divided in two equal doses)	Computed on a basis of 30 to 35 mg. per lb. up to a maximum of 2.0 gm. (divided in two equal doses)
Schedule	Treatment for 7 days No treatment for 7 days Treatment for 7 days	Treatment for 14 consecutive days
No. of patients treated	27	33
No. of patients treated successfully	26	30
Percentage of patients treated successfully	96	91
Complaints during treatment	1 case: vomiting (had measles) 1 case: mild abdominal cramps	2 cases: abdominal cramps and diarrhea 1 case: mild abdominal cramps

members of the same family experienced abdominal cramping and mild diarrhea of brief duration. One patient complained of mild abdominal pain.

DISCUSSION

The percentages of cases treated successfully was high in both series, *i.e.*, 96 and 91 per cent, respectively. The difference between the results of the two regimes is not statistically significant. The relationship of the mild complaints to therapy is doubtful in most of the cases. The complaints did not occur with sufficient frequency to show disparity between the two schedules.

White and Standen [2] reported that piperazine citrate in proper dosage is highly effective for the elimination of pinworm infection. Analysis of their data showed that on a weight/dose/cure ratio, a cure rate of 97 per cent was obtained when the daily dose exceeded 50 mg. per kg. of body weight. The percentage of cures was considerably less in patients who received lower dosages. The therapeutic results obtained in the present study, employing a dosage of 30 to 35 mg. of drug per pound, up to a maximum of 2.0 gm. daily, are comparable to those of White and Standen. Spontaneous loss of infection in untreated control cases of enterobiasis has been reported to be approximately 20 per cent.[1, 2] Using a dosage schedule based upon weight ranges of 15 to 30 pounds, Brown and Chan [1] recently reported that a ten day course of treatment with piperazine citrate eliminated 89 per cent, a "split fourteen day" course, 92 per cent, and the fourteen consecutive day course, 97 per cent of the pinworm infections. These workers observed that a total daily dose of 45 mg. per kg. of body weight (hexahydrate) was 100 per cent effective whether given for ten or fourteen days. The 4 cases in the present series, in which fourteen days of treatment failed to eliminate the infection, received a total daily dose in excess of 45 mg. per kg.

The piperazine citrate syrup was favorably accepted by the patients due to its pleasant taste. In fact, it was necessary to instruct the parents to store the drug in a site inaccessable to the children to prevent them from taking an excess of the anthelmintic.

SUMMARY

Enterobius vermicularis was eliminated in 91 per cent of a series of 33 patients treated for fourteen consecutive days with piperazine citrate (Syrup of Antepar). Ninety-six per cent of a series of 27 patients were treated successfully with the same anthelmintic for two alternate weeks (seven days' treatment, seven days without therapy, seven days' additional medication). The difference between the therapeutic results with these two regimes is not statistically significant. Complaints during therapy were infrequent and mild in both groups of patients. The *total daily dosage* was 30 to 35 mg. of the hexahydrate equivalent of piperazine citrate syrup per pound (divided in two equal doses). The maximum daily dose was 2.0 gm.

When piperazine citrate was administered in either of the above schedules of treatment, it was highly effective for the elimination of pinworm infections and was well tolerated by children and adults. Treatment for fourteen consecutive days offers some practical and theoretical advantages over therapy for two alternate weeks.

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THE MANAGEMENT OF HEMATEMESIS AND MELENA *

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SHREVEPORT

A consideration of the problem of gastrointestinal bleeding seems appropriate

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at this time for two reasons. First, there has been a mounting incidence of gastrointestinal hemorrhage during the last two decades which is reflected in the rising volume of papers appearing in the medical literature and by the increasing percentage of hospital admissions of such cases. These facts are pointed out by Warthin [1] in his recent monograph on the subject. Secondly, there have been striking changes in attitude toward both diagnostic and therapeutic measures employed in these cases—namely, the early use of radiological examination, and, in selected cases, gastroscopy; early feeding of such patients; the more liberal use of blood transfusions and the more willing use of surgery, both as an emergency procedure and later definitive treatment.

That the diagnosis of obscure bleeding is at times impossible to arrive at is evident in the many reported series of cases of which a certain percentage are never solved in spite of complete x-ray and blood studies, at times surgery, and even autopsy examination. In various reports the percentage of undiagnosed hemorrhage runs from 4.2 to 40 per cent. In discussing this problem it would be impossible in the time allotted and of little value to discuss the eighty or more causes of gastrointestinal bleeding. However, it is important to stress the several important causes which account for the majority of these cases and to present a few ideas which may be helpful in the diagnosis of obscure bleeding.

CAUSE AND DIAGNOSIS

For better anatomic and pathologic understanding of gastrointestinal bleeding, Jones [2] has divided the gastrointestinal tract into three main divisions with the duodeno-jejunal juncture and the ileocecal valve as the dividing points. When a patient presents himself with the history of hematemesis, the bleeding is above the ligament of Treitz unless, of course, he is obstructed. This immediately puts one on the trail of causes of bleeding in the first division which has arbitrarily been made. Hematemesis, of course, may be absent with only melena as the presenting complaint. When a patient has passed blood rectally, one has the gamut of the gastrointestinal tract to run. Tarry stools usually mean upper gastrointestinal bleeding but dark clots can occur when blood is retained in the ampulla of the rectum and blood from ulcer bleeding has been known to pass rectally and red when the hemorrhage is massive.

However, let us stress the diagnoses to be thought of in the various sections of the alimentary canal. In the upper division there are two main diseases, peptic ulcer, and esophageal varices, with gastritis, hiatal hernia, and gastric carcinoma as less frequent causes. From the ligament of Treitz to the ileocecal valve is the second division and here the diagnoses make up a very small but important percentage of the whole, as this is the blind spot where the diagnosis is easily missed. In this region Meckel's diverticulum, leiomyosarcoma, and lymphosarcoma are the important causes, with benign tumors also occurring. When red blood passes rectally we think of the third division—the colon, rectum and anus—and here the diagnosis of first consideration is cancer. This does not imply that cancer is the leading cause of rectal bleeding but that it should be the primary thought until ruled out. When cancer is ruled out other causes of bleeding are polyps, diverticulitis, ulcerative infections, and hemorrhoids.

There are many other conditions which must be considered and these must be investigated according to the individual problem. That systemic disease might be the cause of this bleeding is often not considered early enough, and it should be stressed that one must be sure that blood dyscrasias and vascular diseases, such as aneurysms, telangiectasis and hypertension are ruled out.

On attacking the individual problem, the history is the first consideration. Of course, in the majority of cases adequate diagnostic information may have been secured before hemorrhage occurs. Of those that remain obscure the onset is frequent-

ly in a person of good health who is suddenly seized by an urgent desire to defecate accompanied by faintness and passage of red or black stools. This may, at times, progress to a massive hemorrhage or, more frequently, after several passages subside. In many cases the bleeding will recur repeatedly. It has been stressed by several authors that this type of patient rarely becomes a fatality.

In many cases the cause will seem obscure at first but the diagnosis can be assured with a careful work-up. One should remember that massive hemorrhage from peptic ulcer is frequently unassociated with pain, this being the first sign of an ulcer in about 20 to 30 per cent of the cases. Ulcer should always be thought of first as it causes 60 to 80 per cent of all upper gastrointestinal hemorrhage. In these days of therapy with ACTH and cortisone, it may be expected that an even higher proportion of bleeding ulcers will appear since these drugs stimulate the production of gastric secretions and activate old ulcers or produce new ones. Cancer rarely causes as profuse a hemorrhage as an ulcer or varices. Interrogation should be detailed as to the previous occurrence of dyspepsia, weight loss, anorexia and alcohol intake. The occurrence of familial or personal bleeding episodes and of hypertension should be gone into carefully. On physical examination splenomegaly, hepatomegaly, spider angiomata, masses and nodes, and evidences of bleeding elsewhere must be looked for.

X-RAY EXAMINATION

The clinical investigation of such case is of utmost importance. It must be stressed that whereas ulcer is the most common bleeding lesion, it is also probably more often missed, since x-ray examination is usually deferred for two or three weeks and it has been shown by many that an ulcer can heal enough within this period of time to go undisclosed by x-ray. In addition, one must not always assume that the x-ray finding of an ulcer means that the bleeding cannot be from some other source. When no ulcer can be demonstrated and the history suggests it, one is justified in making an "inferential" diagnosis which will more often be correct than incorrect. Segal [3] has pointed out the occasional pitfall with this practice, however, when a small bowel lesion is the culprit. Of the diagnostic procedures, x-ray examination is the most valuable aid in anatomical localization. This should include the stomach, esophagus, duodenum, small bowel, and colon. Repeated examination should be done if needed. Holmes has stated that "there are few cases in which the cause cannot be discovered by properly conducted roentgen examination." And Crohn has said that "it is almost the rule that if x-ray is repeatedly negative the exploratory operation will be equally fruitless." Until the last decade or so the investigator was reluctant to suggest early x-ray examination in the presence of active bleeding. This attitude, however, has undergone great change and with the techniques described by Hampton [4] and by Schatski [5] it has been shown that there is virtually no added hazard to a careful x-ray and fluoroscopic examination of the upper gastrointestinal tract. This is used by many even during massive hemorrhage, except where the picture is complicated by shock, and it is reported to have reduced the number of unknown sources of bleeding by fully half in many hospitals and clinics. It has been reasoned that the introduction of a thin barium mixture into the stomach certainly exerts no more injurious effect than the presence of food, blood or blood clots. Spot films should be taken of the esophagus because by this technique varices or tumors may be demonstrated which have not been visualized on fluoroscopy.

GASTROSCOPY

Another diagnostic procedure which has proved of great value is gastroscopy. This will reveal gastric ulcers and varices which are not demonstrable by x-ray and it has revealed gastritis in a small percentage of otherwise obscure cases, which may occasionally cause massive hemorrhage. It has been pointed out that gas-

troscopy and esophagoscopy can be safely done even in those cases in which the bleeding is due to esophageal varices.[6] This, of course, is a matter of personal evaluation that depends a great deal on the technique and the ability of the examiner. The value of proctoscopy and sigmoidoscopy is obvious in those cases in which the evidence points to bleeding from the lower bowel. Another method that has been suggested as an aid to diagnosis is the use of the Levine or Miller-Abbott tube. One may be able to demonstrate the approximate level, particularly from the small bowel, from which the bleeding occurs.

BLOOD STUDIES

It is perhaps needless to point out the importance of proper blood studies. The blood count furnishes an index to the severity of the hemorrhage, although one must keep in mind the factor of concentration or dilution of the blood. Following a massive hemorrhage the blood count can be very deceiving and after adequate fluids have been administered there may be a decided drop in the erythrocyte count and hemoglobin without necessarily indicating further hemorrhage. Prothrombin, bleeding and clotting times, platelet count, and vitamin C level may furnish a clue of some previously unsuspected blood dyscrasia. Liver function tests will be of help in determining the presence of significant liver disease.

LAPAROTOMY

A procedure which seems to be thought of by many as a diagnostic method is exploratory laparotomy and although there will occur an occasional case in which it seems a proper procedure, the incidence of positive findings in cases so handled has been reported by excellent men as being small. The chief value of this procedure is in the discovery of small bowel lesions as this is the so-called blind spot of the intestinal tract. Bleeding from a Meckel's diverticulum is perhaps the most frequent lesion found in this region by this method. The attitude toward exploratory laparotomy is rather sharply divided and both schools of thought have important points in favor of their arguments. Certainly, however, when this is resorted to, the advice of Jones[7] should be followed. He points out the extreme importance of a very thorough inch by inch examination of the gastrointestinal tract beginning with a look at the stomach by means of an incisional opening.

TREATMENT

We now turn to the treatment of a massive hemorrhage of undetermined origin. Those cases which are not of massive proportion will fall under the method of study just presented and should be treated according to the pathology found. In considering the treatment of massive bleeding much valuable work has been done, particularly in relation to the management of massive bleeding ulcers. Of course, in many cases of obscure origin we are in reality dealing with an ulcer. In any event the treatment will be practically the same during the acute emergency.

Of primary importance is the evaluation and determination of the immediate rapidity and severity of the hemorrhage. This must be done by careful and frequent observation of the degree of shock as indicated by blood pressure, pulse rate, and general condition of the patient. As stated above, the blood count must be properly used to evaluate the degree of blood loss and whether or not bleeding continues or recurs. On the basis of these observations one must gauge the use of blood transfusions. In the not too distant past there was great fear surrounding the use of blood transfusions with the idea that raising the blood pressure might dislodge a clot in the bleeding vessel and start a hemorrhage that had been checked. Blood transfusions are the essential backbone of therapy and should be administered as soon as blood can be made available and at a rate necessary to maintain the hemoglobin above 10 gms. and the red cell count above 3.5 million. This insures adequate blood volume reserve so that should bleeding recur irreversible shock will not appear. Not infrequently, two or more extremities are needed to transfuse blood

rapidly enough to keep ahead of shock and continuing hemorrhage. If possible, an adequate reserve of several pints of blood should be kept available. Frequent observation is necessary to determine the frequency with which transfusions are to be administered. Needless to say, the condition of the elderly or cardiac patient must be kept in mind in order not to precipitate pulmonary edema.

To say that there is still some disagreement on whether to transfuse or not might be true but little has been published in recent years to refute the value of transfusions. Many clinical reports are available that tend to dispel the idea that transfusions, regardless of the volume of the blood given or the rate at which it is given, cause recurrent bleeding. There is even experimental evidence that transfusions and increased blood pressure do not cause increased bleeding or dislodgment of the clot, but rather that transfusions exert a hemostatic and coagulant action.

In support of the latter school of thought are the following reports:

Hoerr [8] gives 500 cc. of blood every eight hours as necessary and reports no ill effects.

Ginsberg [9] reported giving 1000 cc. every one and one-half to two hours with good results.

Aaron [10] said that he had given as much as 2000 cc. in an hour if necessary, and that as great an amount as 5000 cc. might be administered under his regimen.

These and other men have had good results with massive transfusions and this reflects in large part the influence of shock studies and their results during the last war. This evidence in favor of massive transfusions, as well as the facilities, were lacking to a considerable extent before the war.

Over and above the immediate value to the massively bleeding patient in combatting shock and restoring blood volume is the great benefit the patient derives from a general standpoint by having enough blood replacement to correct the marked anemia and the depletion which results from disturbance of fluid and electrolyte balance. The patient's period of hospitalization may thus be shortened, the patient being discharged in much better general condition. Also, if surgery is to be done the patient may go to the operating room well prepared rather than in the chronically depleted and unbalanced state that would exist after a prolonged period of anemia and low blood pressure and its attendant effects such as inadequate renal blood flow and anoxia. Blood is the physiologic replacement for that which is lost and plasma or other fluids will not take the place of it, no matter what the cause of bleeding or the treatment. Adequately large transfusions are the primary concern until all danger to life has been overcome.

We now arrive at the argument of the feeders versus the starvers. First, it is needless to point out that many of the published statistics pertaining to the question are of little value since they include cases of mild hemorrhage along with those cases in which there might be controversial interest. The theory of the feeding school is based on the idea that there is more peristalsis and greater acidity in an empty stomach; that already clotted blood in the stomach is more difficult to handle than a light diet; and, that patients appear to feel better and experience less nausea and vomiting if fed. There is little in reported series of cases comparing one regimen with the other to indicate much significant difference. The crux of the matter appears to be that such feedings do not aggravate the gastrointestinal bleeding and that the patients appear to be happier with the feeding routine.

A more recent addition to the armamentarium of the physician treating massive upper gastrointestinal bleeding is the use of orally administered gelfoam suspension and thrombin solution. There has been no adequate evaluation of this procedure appearing in the literature and it is difficult to conceive of hemorrhage of arterial origin being greatly influenced by this

method of application. However, in the occasional case it is comforting to have this to add to one's efforts at checking continuing hemorrhage. The intravenous administration of vitamin K, which would at first appear to be useless in the absence of pre-existing liver disease, may have some rationale on the basis of impaired liver function due to the anoxia which accompanies massive bleeding.

Lastly, in a discussion of the management of massive gastrointestinal bleeding the importance of surgery must be considered. Surgery must be considered from two standpoints: (1) immediate surgery in those cases that continue to bleed; and (2) the decision to resort to surgery from a more definitive standpoint. An important point that should have been brought out earlier should be emphasized here. The management of a case of massive gastrointestinal bleeding should be one of teamwork between the internist and the surgeon and any decision to operate as an emergency procedure must be the responsibility of both. The most important single factor in making this decision is the time element. It has been shown by many excellent men that the mortality of such a procedure is tremendously influenced by the period of time from the onset of bleeding to the time of surgery. Mortality rates in those cases operated on within forty-eight hours compared with those operated on beyond this period show striking differences. In the majority of series reported the mortality is at least doubled in those cases operated on after forty-eight to sixty hours. This factor has been more responsible than anything else in the fear toward operating on these cases, since in the not too distant past the importance of early surgery was not appreciated and acted upon promptly. It is extremely important to dispel the view of many that the surgical mortality is prohibitive. The discussion again centers mainly around the results of surgery in peptic ulcer. It cannot be denied that surgical mortality rates have been high in the past, but one finds that those patients that were subjected to surgery were, for the most part, in the older age groups, had been long exsanguinated, and most would have died anyway. However, there is considerable recent statistical evidence based on series of cases where the surgeon and the patient were given a fair chance. Finsterer's series of 78 cases operated on within forty-eight hours showed a mortality rate of 5.1 per cent. Sixty-three cases reported by him operated on after forty-eight hours had a mortality rate of 26.9 per cent. As pointed out, there are a number of others reporting comparable results.

Now that evidence has been presented that emergency surgery can be valuable, it is important to decide when and if it is indicated. In trying to predict who might require surgery before the forty-eight hours has passed one can not be dogmatic but the following points should be kept in mind. Each case must be individually evaluated, based on the following factors which point toward a high mortality.

1. The arbitrary age of 45, although an evaluation of age should be physiological rather than strictly chronological.
2. A posterior duodenal ulcer or lesser curvature gastric ulcer.
3. The first massive hemorrhage.
4. The patient who does not respond clinically after twelve to twenty-four hours of intensive transfusions.

There is little argument amongst the surgeons as to the best treatment surgically. This is a subtotal gastric resection if the condition of the patient does not contraindicate it. Attempts to attack the bleeding area locally have been suggested but these efforts are condemned by those with extensive experience as being too frequently futile and they should not be attempted unless the situation is critical. If it is found impossible to remove a duodenal ulcer the vessels leading to it should be ligated and it should be excluded. The gastric resection is not only the best method for the treatment of the bleeding

episode (obviously for a gastric ulcer) but it is also a definitive treatment of the disease itself. It should be brought out that this surgery should never be undertaken without the proper facilities and an expert team.

The treatment of bleeding esophageal varices is a discouraging matter. One attempts to manage this type of case with the knowledge that there is serious and usually incurable underlying disease. Success in halting hemorrhage from this source is poor. Compression with the Sengstaken balloon tube in experienced hands can bring about a cessation of immediate hemorrhage. This will allow the patient to be transferred to the operating room if a decision has been reached to attempt ligation of the varices. This latter measure, if done, is only temporarily successful, and any permanent or semipermanent results that are to be obtained must be by means of more heroic surgery such as a portacaval shunt or some other anastomotic procedure aimed at diverting a large portion of the portal circulation in order to reduce the pressure that exists in the esophageal veins. In more minor hemorrhage from esophageal varices, one can hope that bleeding will stop on a conservative program of small feedings, acid neutralization, proper positioning and antispasmodics.

There is one last condition that I would like to mention before closing since it is being reported as the cause of serious bleeding more frequently than has been popularly appreciated. This is bleeding from diverticula of the colon. I feel particularly compelled to mention this because in our clinic we have had a number of such cases in the past few years and they pose a difficult problem. It should be pointed out that this bleeding can occur from diverticula of the ascending colon and in such instances the bleeding will produce melena or black tarry stools. Fortunately, this type of bleeding is usually not so massive or rapid that adequate diagnostic studies cannot be carried out to determine the distribution and extensiveness of the diverticulosis. If the patient is fortunate enough to have this condition limited to a certain segment of the bowel, such as the lower descending and sigmoid colon, the surgery that may become necessary will not be nearly as extensive as will be the case when the diverticulosis is diffuse throughout the colon. Complete colectomy has been advised in such cases when the bleeding is massive and recurrent, as it most certainly can be.

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SKIN DISEASES IN INFANTS AND YOUNG CHILDREN; A COMBINED PEDIATRIC-DERMATOLOGIC PROBLEM * †

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NEW ORLEANS

We have had the feeling for a number of years that physicians themselves were at least partly responsible for the fact that mothers of newborn children troubled with skin conditions often turn to nonscientific and unreliable sources for advice, obtaining the results with which we are all sadly familiar. As a matter of

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fact, the skin care of newborn children is not yet well formulated. This paper is an expression of our own ideas on the subject, supplemented by those of our pediatric colleagues. It is our hope that eventually the Charity Hospital of Louisiana at New Orleans will establish a combined pediatric-dermatologic clinic in which the more difficult problems of these two specialties may be handled in close cooperation by the specialists who must treat them. During the past year the advantages of such cooperation have been evident; we have exchanged consultations and have advised together, and, speaking for the dermatologic side of the partnership, we have found our results greatly improved.

We have been astonished, as time has passed, to observe the frequency of the commoner skin diseases in young children. We have also encountered a number of the more uncommon conditions, which we had not previously observed so early in life. We have come to the conclusion that some skin conditions in young children can be avoided altogether if those directly responsible for the care of these children are aware of their causes. If these diseases cannot be prevented, they can frequently be aborted, or promptly controlled, by correct management.

ANATOMIC AND PHYSIOLOGIC CONSIDERATIONS

Because the infant's skin differs in a number of respects from the skin of the adult, it might be well to begin this discussion with a brief summary of the chief points of difference. The skin in infancy is naturally thinner than the skin in adult life. It contains less keratin and less pigment, and thus affords less protection against changes of temperature and against sunlight and friction.

In infancy the eccrine sweat glands provide the secretory mechanism; the apocrine sweat glands found in postadolescents and adults, especially in the axilla, the groin, and the anal region, are not present at this period of life. The eccrine glands play a most important part in the skin conditions to be discussed in this paper. These glands, together with the sebaceous glands, begin to deposit their secretions upon the skin at a very early age. Perhaps their chief importance is in the formation of what is known as the acid mantle. In infancy there are gaps in this mantle in the axilla, the interdigital spaces and the genitocrural folds, all of which are areas particularly vulnerable to disease at this time of life.

The blood vessels of the skin, which serve as shock tissue, play a rather important role in certain allergic conditions. The liberation of histamine, and its reaction with the reagins in the endothelial cells of the capillaries of the skin, produce the type of urticarial reaction occasionally seen in infants. These phenomena, together with other physiologic responses of the skin in infancy, are influenced clinically by the vitamin levels in the body.

THE PREMATURE CHILD

Routine of Management.—The excellent program of skin care in effect at the Premature Center at Charity Hospital, under the direction of Dr. William T. Newsome,[1] can also profitably be applied to full-term children. In substance, with certain interpolations of our own, it is as follows:

1. Immediately after birth all gross blood, mucus and meconium are gently removed with plain water. The vernix caseosa, as far as possible, is left undisturbed.

2. The scalp of the premature child is left untouched until the end of the first week of life. Then it is washed with bland soap and water. With full-term babies this cleansing is usually carried out during the first twenty-four hours of life, frankly for the satisfaction of the mothers.

3. Bathing and local cleansing are accomplished with clear water alone whenever this is adequate. When it is not, a plain soap is used.

4. Oils and greases are not applied to the skin. They are particularly undesirable in premature babies, in whom they are often responsible for skin disorders. Many other pediatricians, and most dermatologists, share this point of view. Many feel that the medicated lotions often

used for this purpose are particularly harmful.

5. Powders are also avoided, in the belief that they do no good. This opinion is not shared by all the pediatricians and dermatologists whom we consulted in the preparation of this paper. Our own feeling is that powders often have a cooling effect, and we recommend the use of bland, nonborated talcs.

6. Diapers are changed as soon as they become soiled. No application is a substitute for strict cleanliness.

7. A freshly soiled diaper may be rinsed in the toilet bowl before it is put aside for later washing. If diaper rinses are used, zephiran chloride (1 tablespoonful to a washing) is satisfactory.

8. If ammoniacal dermatitis develops, the addition of a few drops of dilute hydrochloric acid to the formula will expedite healing. The administration of Fleet's phosphosoda (30 drops to a quart of formula) will correct ammoniacal urine and the tendency to diaper rashes from this cause.

9. The unnecessary use of any medication in contact with the child's skin should be avoided. A common result of this practice is sensitization of the skin to the later therapeutic use of the drugs thus employed.

10. The care of the newborn child is a twenty-four hour a day duty. He should be checked at regular, frequent intervals, and whatever is necessary for his cleanliness and comfort should be done promptly. It is a common error to concentrate most of the child's care in an hour or two in the morning and then neglect him for the rest of the day.

This is a simple, sensible routine for the postnatal skin care of both premature and full-term children, and healthier, happier babies, with normal skin, can be expected when it is used.

Common Skin Conditions.—At the Charity Hospital Premature Center, according to Newsome,[1] four benign skin conditions are relatively common in newborn children, but cause very little trouble if they are properly cared for. They are:

1. Milia. These are probably retention products of sebaceous glands. They are most common upon and about the eyelids and on the cheeks, forehead and temples. Ordinarily they require no treatment. If they persist, they must occasionally be curetted, or even excised.

2. Miliaria crystallina (sudamina). These small vesicles, which result from obstruction of the sweat ducts, seldom last longer than a few days and sometimes are present for only a few hours. They disappear if the baby is kept cool and free from perspiration.

3. Toxic erythema. This condition, which is best described as a flea-bite-like dermatitis, is also temporary and inconsequential.

4. Folliculitis. This is a perifollicular infection caused by hemolytic *Staphylococcus aureus*. It may or may not follow some other pruritic dermatosis and it has a tendency to appear in cycles in nurseries. Treatment consists of sponging of the lesions with alcohol and the application of bacitracin ointment. In extremely severe cases systemic antibiotic therapy may be necessary.

SKIN CONDITIONS IMMEDIATELY AFTER BIRTH

At birth the infant's skin is ordinarily a ruddy brick-red. In about half of all children a physiologic jaundice develops after the second day. It is more severe in premature than in full-term children because in them it results from hepatic immaturity and is caused by the inability of the liver to handle the increased amount of bilirubin present in the blood immediately after birth. If the jaundice lasts longer than a few days, or if the child shows other signs of hemorrhagic disease, some more serious condition, such as erythroblastosis fetalis, must be considered.

Petechial hemorrhages are commonly seen on the face and neck of newborn children during the first two days of life. They are benign and disappear spontaneously.

Occasionally, a child is born with a skin so loose and wrinkled that it fits like an

oversized garment. This condition, cutis laxa, is really not a pathologic process and the slack will be taken up as the child develops.

Cutis marmorata, in which the skin has a purplish, mottled appearance, is most often seen in feeble and malnourished infants and in babies exposed to cold.

Certain normal physiologic changes occur in the skin immediately after birth. As a rule, the body skin scales and peels off during the first week of life. The so-called cradle cap is a natural collection of scales and sebaceous secretion found on the scalps of all newborn babies. In itself, it is normal and harmless. If it is not properly cared for, preferably by the weekly application of olive oil, it can go on to seborrheic dermatitis.

The skin of the newborn child is peculiarly susceptible to irritation and friction from clothing, especially when the child is overdressed. Miliaria may result, but will clear up without further treatment if the baby is kept clean and cool and if the causative factors are eliminated.

MILIARIA (HEAT RASH)

Miliaria may take three distinct forms, miliaria crystallina (sudamina), miliaria rubra (ordinary heat rash), and miliaria profunda (tropical anhidrosis).[2] These three groups are fundamentally the same, in that they rise from retention of eccrine sweat within the sweat pores of the skin. They differ in degree, however, and the retention occurs at different levels of the pores. They may be localized or generalized, and they may involve only a portion of the sweat ducts in any given area. Obese infants are peculiarly susceptible to miliaria.

Possible causes of miliaria include excessive or too frequent bathing; the use of excessively strong soaps; friction from clothing; the use of too tight clothing; the use of impervious clothing, such as nylon; hot, humid living conditions, with a lack of cool circulating air.

Heat rashes have been produced experimentally[3] by use of wet compresses, the application of adhesive tape, superficial topical applications of ointments and kerosene, the use of saline compresses, and the application of *Staphylococcus aureus* to the skin.

Treatment consists of keeping the baby cool, in a well ventilated environment, and controlling activity which would increase the sweating tendency. Friction from clothing is eliminated. The application of soothing dusting powders may help. Our own experience does not coincide with the experience of those observers who recommend the use of anhydrous lanolin or mineral oil to the skin. Soaps which cause drying of the skin and which dissolve the lipid covering should be avoided.

INTERTRIGO

Intertrigo or chafing, which is characterized by redness, maceration and weeping of the tissues, tends to occur wherever the cutaneous surfaces are kept in apposition, as in the groins, the gluteal folds, and the axillae, and in the folds of the neck in fat babies. The use of tight rubber covers over wet diapers is a frequent cause. So is the use of impervious clothing.

In the noninfectious forms of intertrigo treatment consists of the use of an incandescent light over the affected parts; the daytime application of a drying powder (equal parts of zinc oxide and talc); and the nightly use of so-called 1-2-3 ointment, containing 1 part of Burow's solution, 2 parts of anhydrous lanolin or aquaphor, and 3 parts of plain Lassar's paste. Mild lotions are sometimes better tolerated than drying ointments.

In secondarily infected cases, presumably originating in *Monilia albicans* infections, treatment consists of compresses of Burow's solution (1 Domeboro tablet to 1 quart of water or cold skimmed milk) or of zephiran chloride aqueous untinted (1:2,000 or 1:5,000). Water should not be used on the skin except in the form of starch or colloidal baths, and soaps should also be avoided. A plain dusting powder may be used. Nylon and other impervious clothing should be avoided and only cotton garments worn.

A generalized form of intertrigo, resembling infantile eczema, may also develop. In these cases there is a local elevation of temperature, with suppression of evaporation, accumulation of secretions, erythema, denudation of the horny layers of the skin, retention of debris, and subsequent secondary infection by pyogenic organisms, by *Candida albicans* or other yeasts, or by both pyogenic and yeast organisms.

NONALLERGIC INFANTILE ECZEMA

Some cases of apparent infantile eczema, in which allergy seems to play no part, develop because babies with especially sensitive skins are bathed too frequently, or are scrubbed too hard. Highly alkaline soaps are responsible for some cases. Dehydration, scaliness and fissure formation result, and in the absence of proper treatment the condition may become severe and obstinate. Rothman [4] and others think that the xerosis found in so many babies during the winter months is explained not only by unduly frequent baths and excessive use of soap, practices which are responsible for removing an excess of the lipid covering of the skin, but also by inadvertent dehydration of the skin caused by over-heating of homes and similar practices. Some feel that a low humidity followed by a sudden rise in barometric pressure is an ideal setting for the chain of events that culminates in these skin disorders. The physiologic explanation is that more of the water content of the keratin layer of the skin is dried out than reaches it from below, and that a state of dehydration results.

The best treatment of this condition is the use of Lassar's paste with 2 per cent cottonseed oil or olive oil. The use of the paste prevents too rapid absorption of the oil. Hydration should be increased by an increased intake of fluids.

Many new soaps are commercially available today for use on children with highly sensitive skins. These superfatted soaps have a reduced alkalinity and an excess of oil in their make-up. They are efficient, but are psychologically objectionable to some persons because, unlike the conventional soaps, they do not lather.

ALLERGY AND TRUE INFANTILE ECZEMA

A considerable amount of allergy is encountered in infants, as might be expected, since the incidence of allergy in the general population is estimated at 10 per cent. A child with one allergic parent seems to have a 50 per cent chance of developing allergy; with two allergic parents the risk rises to 75 per cent. Egg white, however, seems to be the single skin-sensitizing allergen which can pass through the placental barrier and be present at birth. Infantile eczema, the earliest of the many different forms of allergy in human subjects, is probably the most important skin condition observed in infancy. About half of the babies who present it will later present some other form of allergy.

Cow's milk is probably the most antigenic offender. The anaphylactic shock observed in guinea pigs is a well known phenomenon and a parallel perhaps occurs in young children. They are given cow's milk the first few days of life, before an adequate supply of breast milk is available. Then they are placed on the breast. Some months later, when they are weaned, feedings of cow's milk are resumed. Because a skin sensitization has developed, they are now allergic to the milk, and they react to it when it is given to them day after day. Some of the larger clinics and hospitals, to prevent this chain of events, are now using nonantigenic milk substances for infant feeding in the first few days of life.

A variety of other offenders, in addition to cow's milk, may be responsible for allergy. They include egg, wheat, chocolate, citrus fruits, peas, spinach, fish, cod liver oil, house dust, feathers, kapok, glue, human or animal dander, dyes used in clothing, wool, nylon, rubber and plastic materials and allied products, baby oils, and fungi; *Monilia albicans* is a particular offender.

About 99 per cent of all allergic children have multiple sensitivities. The general experience is that 70 per cent of sensitivities involve food, about 10 per

cent pollens, and the remainder environmental substances.

McGovern [6] feels that bacterial infection plays an important role in both the causation and perpetuation of some cases of infantile eczema, and on this basis recommends parenteral as well as local antibiotic therapy in their management.

The identification of offending substances is not always easy, because skin testing with inhalants and patch testing with contact substances is considerably less accurate in infancy than it is later in life. We have found that the most useful way of determining what food is causing the trouble is not by elaborate elimination diets and similar methods but by careful questioning of the mother as to what foods have caused vomiting, diarrhea, and other digestive disturbances, what foods had been taken before the skin rash developed, and what foods the child refuses to take. This information gives a point of departure in the treatment of the case.

Management—The first step in the management of the allergic child is prevention. Some of these children can be spared distressing experiences if the physicians in charge always inquire into the genetic history, to identify possible atopy in the family. This is a particularly important consideration if an older sibling has manifested allergic tendencies. If the history is positive, care in feeding, so that sensitization to certain allergens will not occur, will avert the man-made results some of us have been overlooking in otherwise good care of infants and young children.

According to Grulee and Sanford,[7] the incidence of eczema is much less among breast-fed than among artificially fed children. Their observations show that the potential of allergy is twice as high when bottle feedings are combined with breast feedings, and seven times as high when only bottle feedings are employed.

The first precaution in cases of possible allergy is therefore to have the mother nurse the child, and to continue to nurse him as long as possible. During lactation she should omit egg white from her diet and drink no more milk than is actually necessary. If breast feeding is not practical, the following milk substitutes should be employed in the order of preference in which they are listed:

1. Nutramigen. This preparation consists chiefly of amino acids, which are structurally nonallergenic and which are clinically less allergenic than other proteins.

2. Mulsoy or some other soy milk. These preparations contain no animal protein. They are high in unsaturated fatty acids, which may be helpful if an eczematous condition has developed. They supply the necessary values of protein, fat, carbohydrate, and minerals. According to McGovern,[6] they are not always effective in relieving infantile eczema. If an allergy exists to lactalbumin, the child may also become allergic to soy products if they are used over long periods of time. Babies fed on these preparations sometimes become malnourished, show disturbances of the calcium-phosphorus ratio, or even develop an edema due to hypoproteinemia.

3. Goat's milk or evaporated goat's milk. The casein constituent in goat's milk is the same as in cow's milk, but the lactalbumin is different, and its use, therefore, frequently solves the problem of infantile eczema when cow's milk is the offending allergen.

4. Taro milk, which is a vegetable milk substitute.

5. Meat milk, with added minerals.

6. Boiled cow's milk.

7. Casein digests.

8. Cereal substitutes.

The most satisfactory local application in infantile eczema consists of 1 per cent naftalan in Lassar's paste. Hydrocortisone ointment has been employed, but we do not look with favor upon it. It has been shown that some of the newer topical preparations such as florinef (Squibb), and alflorone (Sharp and Dohme), because of their chemical structure, are likely to be absorbed systemically, and

more completely, than certain other preparations (neocortef ointment and hydroderm). One must, therefore, be on the alert to detect possible undesirable endocrine effects, just as when steroids are used internally. We seldom use these products.

Cortisone by mouth has been used in occasional, very obstinate cases of infantile eczema. Although dosages up to 75 mg. daily have been employed, the smallest dose which will control the special case should be used. The risk of the development of Cushing's syndrome is not serious if the child is closely observed and if medication is discontinued as soon as untoward signs occur.

Steroid therapy is not, of course, curative, and infantile eczema may reappear as soon as the drug is discontinued. Hill [8] has summed up the situation very well: Although no harm has been apparent in most infants treated for relatively long periods with moderate doses of cortisone, this treatment should be reserved for severe cases; should be used for as short a time as possible, and should be employed only to relieve immediate, distressing conditions. The best plan is to use dosages which will control the eczema, and not attempt to suppress it entirely by using large dosages.

All suspected foci of infection should be eliminated. With bacterial allergy playing more and more of a part in some cases of infantile eczema it seems practical, as already mentioned, to use some form of antibiotic therapy systemically as well as locally if the proper indications exist.

In some severe generalized cases, especially those associated with edema and hypoproteinemia, therapy should include liver extract, injections of vitamin B complex, the oral administration of hydrolyzed amino acids, and the intravenous use of plasma or whole blood.

The condition of the child with infantile eczema should be thoroughly discussed with the parents. The disease will certainly be aggravated by an emotionally disturbed family.

Immunization—Diphtheria-tetanus antitoxin should be given to the allergic child as a prophylactic measure, during dermatitis-free periods if possible. If protection against tetanus should become necessary before the toxoid has been given prophylactically, a bovine preparation should be used, provided that the child is known not to be sensitive to milk or beef.[9] In cases of sensitivity, a despeciated horse serum antitoxin may be used, but with great caution.

If pertussis immunization is necessary, it is essential that a phase I vaccine be used and that it be grown on media prepared with human rather than with animal blood, to avoid sensitization to a foreign protein. The vaccine should be given yearly until the child is 5 years old. Immunization against pertussis is necessary because whooping cough may light up a subclinical respiratory allergy. If, in spite of the immunization, pertussis should develop, it should be vigorously combated with human immune globulin (Cutter Laboratories) or hyperimmune human serum (Philadelphia Serum Exchange).

A child with atopic dermatitis should not be vaccinated against smallpox until the skin is perfectly clear, for three reasons:[9] (1) There is danger of multiple inoculations in areas which have been scratched. (2) The virus is carried in the blood stream for a few days after injection and may localize in any area of diseased skin. (3) Generalized vaccinia may result, and may be fatal as well as disfiguring. If it is necessary to vaccinate an allergic child, it should be done during the summer (unless his allergy is exacerbated in that season), three or four weeks after the skin has become perfectly clear. Great caution should be exercised in the vaccination of a child who has unvaccinated brothers and sisters with active eczema. The vaccinia could be transmitted to them from a contaminated towel, tub, or some similar contact. The same thing can happen if an atopic child is exposed to herpes simplex; he may develop a Kaposi type of varicelliform eruption.

Natural Cure—Why it happens is not clear, but the fact remains that most cases of infantile eczema subside spontaneously when the child is 2 or 3 years old. This may occur because the gastrointestinal wall ceases to be permeable to newly introduced proteins, or because there is such an alteration of the digestive enzymes that they can more completely handle the offending allergens, or because the absorbed protein is finally neutralized by some unknown immune reaction. Whatever the reason, pediatricians and dermatologists alike have reason to be thankful that nature ultimately terminates a condition that can be so uncomfortable for the child, so alarming for the parents, and so disconcerting to the physicians in charge of the case.

SUMMARY

In the past, not a great deal of attention has been paid to the management of skin conditions in infants and very young children. This is unfortunate. Pediatricians and dermatologists have much to learn from each other, and consultations between them should be encouraged. A proper routine of skin care will prevent many skin conditions in the immediate postnatal period, while proper care will readily control most of those which do develop. A routine applicable to both premature and newborn infants is outlined. The management of the physiologic benign dermatitides which develop shortly after birth is discussed. The causation and therapy of intertrigo, miliaria, and skin allergies, particularly infantile eczema, are also discussed in the light of modern concepts and methods of management.

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THE COMMUNITY MANAGEMENT OF THE MENTALLY RETARDED*

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In the past, the contribution of the community to the problem of the management of the mentally retarded was, in general, limited to the development of special classes in our grade schools for the less seriously involved, and the establishment of state institutions for the remainder. The inadequacy of such a total program has become increasingly evident. This is particularly apparent as our industrial civilization becomes more complex and the tendency towards urban living, widespread. It is clear that if we are to exploit to a maximum the capacities of our mentally retarded, a more realistic approach to the problem is essential.

The major difficulties in meeting our responsibilities along these lines stem from the following aspects:

1. The degrees of intellectual defect in our retarded population vary from the most profound with I.Q.s of 0-25 to levels that merge almost imperceptibly with the normal. This requires widely varying management techniques. Fortunately, the largest group, making up almost 75 per cent of the total, are found in the upper levels with I.Q.s between 50 and 75. These

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are amenable to training procedures which might insure adequate integration into our social and industrial society for the majority.

2. Inadequate facilities and programs tend to stimulate the development of anti-social and undesirable behavior patterns in the mentally retarded to an even greater degree than in the normal population. If not prevented by early attention to their needs, such behavior deviations complicate the later management, adversely affect the possibilities for successful community integration; and frequently add to our delinquency problem.

3. Since brain injuries and malformations, whether of known or unknown etiology, account for the majority of our mentally defective population, we might expect a high incidence of other disabilities in this group. Such is the case, and other handicaps like cerebral palsy, epilepsy, basic personality defects, and sensory abnormalities are fairly common, and add to the difficulties of management.

These three aspects, as well as others which will be mentioned later, make it difficult to discuss in a limited period, the over-all problem of management in any great detail. It is our purpose, therefore, at this time, to simply summarize the more important and basic features of this problem.

From the point of view of management, the mentally retarded may be divided into three groups:

Group 1: This includes those with intellectual capacities as described by I.Q.s between approximately 50 and 75. They are both educable and trainable and for descriptive purposes are called high grade. They are rarely diagnosed as such before the third or fourth year of life. Most commonly, their basic difficulties become apparent with the onset of their school experience. This is not surprising since this period of life represents the first experience of the child in a truly competitive environment, where minimal degrees of intellectual deficiency may offer significant handicap. Experience has indicated that the vast majority of this category of defect can be integrated into the adult social and industrial world if proper provision is made for their training, early supervision and management. This requires a specialized community program designed to meet the needs of those children including provisions for some specialized facilities. To place the major responsibility for the rehabilitation of these children on the family alone, as has been the practice in the past, and still is, in most parts of the country, simply invites poor results.

A coordinated program for this high grade category of the mentally retarded should include the following:

1. Diagnostic facilities must be available for early recognition. It is obvious that there are many reasons for maladjustment and failure to progress in the expected manner in school and in the community. In only some of these children is the basic mechanism an intellectual deficiency alone. In most it is a combination of factors, including physical, mental and environmental conditions. The proper management requires this knowledge in detail.

2. Special classes in the grade schools for this category of the mentally retarded have been widely accepted by most community public education systems as a means of meeting their educational responsibilities for these children. Considerable progress has been made in developing effective programs and defining acceptable goals. While these facilities of which there is still a shortage throughout the country, have attempted to meet the needs of the younger child in this defective range, they have done little to provide the means for industrial training and socialization required for the older child for whom integration into our industrial society is the ultimate goal. Special classes for these older children in our regular high schools or regular manual training schools are vitally needed to meet this problem. In addition to the industrial training and exposure to the manual arts, the social values in the opportunities for contact with children of their own chronological

age and physical status are of inestimable importance.

3. One of the major weaknesses in the management of these children, even in the more enlightened communities, has been the general failure to maintain some type of supervision for these high grade retardates after leaving the, more or less, protected environment of the public school system. Such supervision for which some type of social service organization must be responsible should include facilities for job counseling, finding and placement, as well as social and recreational guidance into acceptable channels. Social services of this type could be most effective when attached to general guidance and mental hygiene clinics already established as a community service, or in specialized facilities of this kind where the load makes this necessary. These clinics should also serve as a continuing means for the proper orientation of parents, the early recognition and treatment of minor behavior and personality disorders, and provide a necessary integration of home, school and training facilities and the community.

An over-all program of this type or some acceptable approximation would make it necessary to institutionalize only a very small percentage of children in this category of defect. Such a solution, namely institutionalization for any individual child should be reserved for the following indications:

1. A serious behavior or personality defect which makes it impossible to establish a reasonably satisfactory school or community adjustment. In this case, the change in environment and some form of psychotherapy in the institution might reduce the need for extended commitment and allow for an early return to the community.

2. A completely unsatisfactory home environment and an unavailable suitable foster home substitute occasionally necessitates institutionalization. Social work with the family while the child is away, may also reduce the need for extended separation.

3. The more or less complete absence of community facilities and active interest in the management of these children are probably the major factors necessitating institutionalization. The separation of a child from its family for these reasons is an unfortunate result of community neglect of, what I believe, should be a fundamental public responsibility. Moreover, from the point of view of simple economics, to institutionalize a child because of paucity of community facilities represents the most expensive and usually the least satisfactory way of meeting this problem on a long-term basis.

Group II: Our second group of the mentally retarded, described as middle grade, range in I.Q. from about 25 to 50. They make up about 20 per cent of the over-all problem, which is less than a third the numerical magnitude of the preceding category. The Mongoloid child is the best example of this group, and actually makes up a large part of it. The problem differs from that represented by the high grade retardate in many ways, including the following:

1. Diagnosis is made much earlier in life, sometimes, as in the Mongoloid, at birth. Management problems requiring solution thus present themselves earlier.

2. Prognosis, as to eventual intellectual status can be made with more assurance during early life.

The proportion of these children that might be reasonably well integrated into the community with minimal supervision is difficult to estimate. Our past experience in the community or institutional management of these children has failed to give us any adequate yardstick. The reason for this is obvious. With few exceptions, practically no effort has been made either in supervisory services or training facilities to completely explore the industrial and adjustment capacities of these children. Another factor has been the relatively shortened life-span, so characteristic in pre-antibiotic days. We know now on the basis of present experience that this need not be and rarely is the

case for most, if satisfactory medical care is made available to an extent comparable to that of the normal population. Our past experience in the management of these children has been characterized by an almost complete lack of available community facilities for the training of these children. The complete responsibility has been left to the individual family group, unaided and frequently poorly oriented. The inevitable result has been an increasing demand for early institutionalization often soon after birth. Such a program of management not only fails to meet the immediate needs of the child or exploit any potential capacities but also falls far short of being a satisfactory solution for the many parental problems, instinctual, emotional or otherwise, that the birth of such a child precipitates in the family unit. In meeting this problem on a community basis certain fundamental aspects must be recognized and appreciated.

1. The extreme importance of the mother-child relationship during the early years for the development of satisfactory personality and behavior patterns and acceptable inter-personal relationships is almost universally accepted in the case of the normal child. I am firmly convinced that such is also the case in mentally retarded children of the type we are discussing at this time. In fact, it may possibly be more vital for them, because of their handicap. This is true even though eventual institutional placement becomes necessary since even the protected environment of an institution for these children is a relatively challenging experience in interpersonal relationships for which a satisfactory personality development is essential.

2. The possibility that the presence of a retarded child of this category of severity may provide a serious threat to the integrity of the family, especially if other, normal siblings exist, has been raised on many occasions. My own experience with many such families makes me firmly convinced that, while such a complication is possible, it need not occur except under unusual conditions. However, parental orientation, starting early, and of a continuing nature, is essential. It is instinctual for parents to want to do that which they understand represents an important aspect in the child's future adjustment.

I am also convinced that the other normal siblings in such a family need not be adversely affected by the presence of such a retarded child. The reaction and behavior of the normal siblings will be determined primarily by the reaction of the parents, especially the mother. If this is accepting and satisfactory, unfavorable sibling reaction is unlikely.

One occasionally hears the fear expressed that a particular mother of such a child might be too unstable, or emotionally unable to adjust to the presence of such an infant in the family. Experience suggests that the mother who is so emotionally insecure that the early care of such a handicapped child represents a serious hazard to her mental health, may be too unstable to successfully withstand an early separation from her child without serious emotional disability.

The management of the middle grade retarded child, from what has been said, represents a joint responsibility of the family and the community. As in the case of the high grade retardate, certain facilities are essential. These include: (a) Special classes either in the school system or elsewhere, especially designed for this type of child; (b) industrial training units for the older child who is able to participate; (c) sheltered workshops, for those who continue to adjust and live in the community; (d) social services to integrate and coordinate the program, and supply some type of recreational activity.

It is obvious that even an adequate program such as this will not result in the complete integration of most of these middle grade retardates with our highly industrialized society. However, from our experience at Southbury, one may expect a reasonable proportion to be so integrated. What is of equal importance is that

for the remainder it would undoubtedly delay considerably the need for institutionalization, and improve greatly the subsequent adjustment. The economic benefits resulting from the reduced periods of domiciliary care, and the incalculable satisfaction of the parents involved would in themselves justify the program.

Group III: This category of the mentally retarded includes those with the most profound degree of handicap. This so-called low grade group, with I.Q.s well under 25, fortunately only makes up 5 per cent of the over-all problem. They can be recognized very early in life, and there is a high incidence of associated handicaps, especially cerebral palsy and epilepsy. For most, the problem of management is primarily custodial, humane care. The severity of the intellectual deficit makes it impossible to develop any significant interpersonal relationships. The need for a mother-child relationship is thus of minimal importance, and it is more a matter of merely supplying care, rather than who undertakes this responsibility. The family, per se, has little to offer such a child over and above that of an acceptable institution. The problem here is almost entirely one that primarily affects the family unit rather than the child. For various reasons, some economic, many families elect to supply this care at least while the child is young enough not to make the care too burdensome. Since private residential care is probably outside the financial means of most families except for relatively short periods, public supported facilities must be made available to meet this problem. In this country, as a rule, the problem has been met by the addition of nursery-like structures to our state training schools. Elsewhere, smaller structures, designed for this purpose, are built in the vicinity of larger population centers where the necessary services can be more easily purchased, reducing the need for supplying personnel quarters as is done in this country. With the increased life span of these children resulting from the advances in the control of infectious diseases, our training schools are gradually finding it necessary to divert more and more of their services to these ever-increasing custodial responsibilities. There is need for a reevaluation of our efforts in meeting this problem so that the basic functions of the training schools are not neglected. We, in Connecticut, where the problem is as urgent as elsewhere, are becoming increasingly interested in the possibilities of smaller nurseries near larger population centers for this type of child. This type of decentralized service under state or local control offers interesting possibilities in meeting what appears to be an expanding and vital problem.

I realize that this paper has little that can be considered as basically "medical". Yet, it has an important place in the deliberations of physicians to whom parents traditionally turn with such problems as affect the mentally retarded. The recent growth of parent groups with their legitimate demands for help in meeting their needs has made it increasingly important for physicians, from whom advice will be sought, to inform themselves not only of the nature of the problem but also the measures the community must take to adequately meet its responsibilities in this respect most effectively.

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CARBON TETRACHLORIDE POISONING

The dangerous effects of carbon tetrachloride should become well understood by the profession and better appreciated by the public. This chemical was discovered by a French chemist and physician, Regnault, in 1839, as a product of the action of chlorine on chloroform in sunlight. After the introduction of chloroform as an anesthetic, and in succeeding years, carbon tetrachloride was used as an analgesic and as an anesthetic, but not with favorable results. About a half century ago, because of its effect as a solvent for fats, it was used as a shampoo. In a few years, disastrous results led to its disuse in that field. In 1921, Hall published his work on the potency of carbon tetrachloride as a vermifuge against hookworm, and in the decade that followed much of the knowledge we now have of carbon tetrachloride was developed. While it was an effective vermifuge for hookworm, some of the persons taking it became ill and many died. Since that time it has had little use in medicine and its place has been taken by the appreciably less toxic tetrachlorethylene, which has largely supplanted it as an anthelmintic.

The danger at the present time comes from its industrial use. A review by Hardin[1] gives an instructive account of its wide increasing use, its dangers, and the disease picture produced by poisoning. It is a solvent for such materials as oils, grease, fats, waxes, rubber paints, lacquer, asphalt, gums, and resins. It vaporizes quickly and because of its ability to dissolve grease has been used as a dry cleaner. It is noninflammable and has a large use as a fire extinguisher. It is also one of the raw materials in the production of the "Freons," which are widely used as refrigerants, and it is also used in the fumigation of grain. Because of its use in these many fields, the chance of poisoning by ingestion or inhalation has greatly increased. In twenty-five years the production has jumped from 33 million pounds per year to 331 million pounds per year.

According to the regulations governing handling of this chemical containers holding mixtures of 10 per cent or more of carbon tetrachloride should have the following label: "WARNING: HARMFUL VAPOR. Harmful if swallowed. Avoid prolonged breathing of vapor. Avoid prolonged contact with skin." The maximum allowable concentration is 25 parts of carbon tetra-

[1] Hardin, B. L., Jr.: Carbon tetrachloride poisoning—A review, Ind. Med. & Surg. 23:3, 93-105 (March) 1954.

chloride per million parts of air. The odor perception threshold is about 80 parts per million. "If you can smell it, it is unsafe."

Clinical and experimental observations have established the fact of considerable variability in human susceptibility to poisoning by carbon tetrachloride. The effects are much the same whether by ingestion or inhalation, except in the former the liver symptoms come first.

In acute poisoning the onset and course are a matter of minutes, during which time there is rapid development of malaise, weakness, nausea, vomiting, tachycardia, and prostration in varying degree. Death may occur in a matter of minutes. Recovery may be rapid, possibly to be followed by subacute poisoning later.

Geiger attributes the unconsciousness to the anesthetic effect of the drug, and the sudden death to the effect of the drug on the heart, in which there is development of frequent ventricular extrasystoles, and subsequently, ventricular fibrillation. Subacute poisoning is the more frequent and the more important type, in which there is a slower onset and a longer duration of symptoms. These are due to the severe toxic effect of the chemical upon, principally, the liver, the kidney, and the nervous system. Necrosis of the central part of the liver lobule occurs to a greater or less extent. This may be followed by the evidences of severe liver disease, or regeneration may take place in a matter of weeks. The effect on the kidney is on all parts of the nephron but principally in the distal convuluted tubules and the loops of Henle, producing the clinical picture of lower nephron nephrosis or acute renal insufficiency. In this situation, the clinician, without the history of exposure to carbon tetrachloride, would be apt to make a diagnosis of chronic glomerulonephritis.

There is a stage of oliguria or anuria beginning one to three days after exposure and lasting one to three weeks. In favorable cases diuresis would begin about the thirteenth day and would last one to two weeks. Diuresis may be so active that dehydration may become threatening.

Treatment for the condition is not specific. Supportive therapy may be very helpful. In cases in which liver damage is extensive the treatment would be similar to what one would use for infectious hepatitis. Hardin notes, however, that in spite of experimental work and theoretical considerations, the use of sodium xanthine, choline, B_{12}, and calcium proposed by various authorities has not been effective. A high carbohydrate diet is desirable, and a high protein diet might or might not be desirable depending upon the degree of azotemia. The most important problem in the realm of treatment is that of a lower nephron nephrosis. Not more than 700 to 1000 ml. of fluid should be given daily during the oliguric stage.

Renal decapsulation, peritoneal dialysis, intestinal irrigation, and exsanguinotransfusion have not been successful.

The principal aim is nutritional support during the time that regeneration of the liver and kidney cells may take place.

Chronic poisoning appears in those individuals who have had prolonged exposure to small amounts of this chemical. Cases of amblyopia, mental dullness, cirrhosis of the liver, and chronic dyspepsia have been reported.

Carbon tetrachloride along with many other solvents, therefore, constitutes a widespread industrial hazard. Its poisoning effects may be obvious or subtle. A minor degree of protection is provided by the laws governing its distribution. The principal safety will come only from adequate public education and from the continued alertness of the profession in treating patients where exposure has been a possibility.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

KEPT THE FAITH

The Woman's Auxiliary to the American Medical Association presented the American Medical Education Foundation, with a check for $80,000, to be distributed to the respective Grade A Medical Schools for use in any manner best fitted to their needs. This, we think, is a worthwhile contribution and the members of the Auxiliary should be proud of this accomplishment.

AMA REGISTRATION

Physician registration totals stood at 11,403 by 4 p. m. on Thursday, June 9. This compares with an MD registration of 11,700 in San Francisco last year at the end of the fourth day.

Grand total of all registrants for the Atlantic City meeting reached 26,767. In addition to the doctors, breakdown on that figure is: 12,450 guests, 437 nurses, 833 residents, 239 technicians, 388 medical students, and 517 interns.

MEMBER REPRESENTATION

We are indeed pleased to know that our Society was so well represented at the AMA meeting in Atlantic City. The following members were registered and we are sure they profited materially by participating in the program:

M. M. Miller, Lake Charles
Ian M. Thompson, Ft. Dix
Donovan C. Browne, New Orleans
Wm. W. Coulter, Jr., Greenwell Springs
Wilkes A. Knolle, New Orleans
F. W. Pickell, Baton Rouge
Charles C. Abbott, New Orleans
William B. Clark, New Orleans
Val H. Fuchs, New Orleans
Carlton L. Harris, Baton Rouge
Stonewall J. Phillips, New Orleans
Bertha N. Wexler, New Orleans
Alton Ochsner, New Orleans
Geo. E. Burch, New Orleans
Guy A. Caldwell, New Orleans
James Q. Graves, Monroe
W. R. Hardy, Sr., New Orleans
Gustav C. Bahn, New Orleans
Sidney D. Bullard, New Orleans
Richard A. Faust, New Orleans
George M. Haik, New Orleans
C. Gordon Johnson, New Orleans
Burl B. Lane, Jr., Zachary
Lee D. McLean, New Orleans
Sanford W. Tuthill, Bogalusa
Vincent J. Derbes, New Orleans
Merrill O. Hines, New Orleans
Thomas Campanella, Baton Rouge
Charles A. Jones, New Orleans
Milton L. McCall, New Orleans
Robert E. Schoel, New Orleans
Robert W. Borders, Shreveport
James H. Ferguson, New Orleans
E. M. Harrell, Lafayette
D. T. Milam, Monroe
Morris J. Weisler, New Orleans
James H. Allen, New Orleans
John Adriani, New Orleans
James W. Burks, New Orleans
C. Grenes Cole, New Orleans
Max M. Green, New Orleans
Philip H. Jones, New Orleans
Richard L. Buck, New Orleans
A. N. Evans, Alexandria
Nathan Goldstein, New Orleans
Arthur A. Herold, Shreveport
Martin S. Kleckner, Jr., New Orleans
Arthur E. McKeithen, Hodge
Nathan H. Polmer, New Orleans
Francis J. Vincent, Crowley

REPORT ON ACTIONS OF THE HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION

104th ANNUAL MEETING

JUNE 6-10, 1955

ATLANTIC CITY

This report covers only a few of the many important subjects dealt with by the House and is not intended as a detailed report on all actions taken.

ATLANTIC CITY, June 10 — Osteopathy, medical ethics, medical practices, intern training, hospital accreditation and polio vaccine were among the major topics of discussion by the House of Delegates at the American Medical Association's 104th Annual Meeting held Jnue 6-10 in Atlantic City.

Elected unanimously as president-elect for the coming year was Dr. Dwight H. Murray, general practitioner of Napa, California, who has been a member of the A.M.A. Board of Trustees for ten years and its chairman for the past four years. Dr. Murray will become president of the American Medical Association at the June, 1956, meeting in Chicago, succeeding Dr. Elmer Hess of Erie, Pa. Dr. Hess took office at the Tuesday evening inaugural program in Atlantic City's Convention Hall.

The House of Delegates voted the 1955 Distinguished Service Award of the American Medical Association to Dr. Donald G. Balfour, surgeon, author and researcher of Rochester, Minn., for his outstanding contributions to medicine and humanity. Dr. Balfour has been with the Mayo Clinic since 1907 and he also has been associate director and then director of the Mayo Foundation for Medical Education and Research. His

son, Dr. William Balfour, accepted the award for his father at the Tuesday inaugural program.

The Osteopathic Issue

The Reference Committee on Medical Education and Hospitals submitted two reports after considering the recommendations of the Committee for the Study of Relations Between Osteopathy and Medicine. The minority report, which was adopted by the House of Delegates, said:

"One member of the Reference Committee was completely satisfied that an appreciable portion of current education in colleges of osteopathy definitely does constitute the teaching of 'cultist' healing, and is an index that the 'osteopathic concept' still persists in current osteopathic practice. Since he cannot with good conscience approve the recommendation that doctors of medicine teach in osteopathic colleges where 'cultism' is part of the curriculum, he respectfully makes the following recommendations to the House of Delegates:

"1) That the report of the Committee for the Study of Relations Between Osteopathy and Medicine be received and filed; and that the Committee be thanked for its diligent work, and be discontinued.

"2) That if and when the House of Delegates of the American Osteopathic Association, their official policy-making body, may voluntarily abandon the commonly so-called 'osteopathic concept', with proper deletion of said 'osteopathic concept' from catalogs of their colleges; and may approach the Trustees of the American Medical Association with a request for further discussion of the relations of Osteopathy and Medicine, then the said Trustees shall appoint another special committee for such discussion."

The majority report of the reference committee, which was rejected by the House, made the following recommendations:

"Your Reference Committee after a study of the report of the Committee for the Study of Relations Between Osteopathy and Medicine and the study of other evidence submitted is not completely satisfied that the current education in colleges of osteopathy is free of the teaching of 'cultist' healing.

"In view of the desire to elevate the standards of teaching in colleges of osteopathy, your Reference Committee recommends approval of the recommendation of the Committee that doctors of medicine may accept invitations to assist in osteopathic undergraduate and postgraduate medical educational programs in those states in which such participation is not contrary to the announced policy of the respective county and state medical associations. Such teaching services would be ethical.

"Your Reference Committee approves the recommendation of the Committee that the House of Delegates request state medical associations to assume the responsibility of determining the relationship of doctors of medicine to doctors of osteopathy within their respective states or request their component county societies to do so.

"Your Reference Committee recommends that a committee be appointed at the discretion of the Board of Trustees to confer with representatives of the American Osteopathic Association concerning common or inter-professional problems on the national level."

Change in Medical Ethics

The Reference Committee on Miscellaneous Business dealt with ten resolutions concerning the dispensing of drugs and appliances by physicians. The following committee report was adopted by the House:

"A great many individuals appeared before your committee in the interest of several resolutions submitted to it requesting amendment to or deletion of Chapter I, Section 8 of the Principles of Medical Ethics, and the bulk of your committee's time was spent on this very important and complex matter.

"With reference to this problem, the following resolutions were considered: Nos. 7, 12, 16, 18, 22, 35, 39, 58, 62 and 73.

"Your committee recommends that no one of these resolutions be adopted as submitted but does recommend deletion of Section 8, Chapter I of the Principles of Medical Ethics which now reads:

'OWNERSHIP OF DRUGSTORES AND DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

'Sec. 8.—It is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise unavailable. This inadequacy must be confirmed by his component medical society. The same principle applies to physicians who dispense drugs or appliances. In both instances, the practice is unethical if secrecy and coercion are employed or if financial interest is placed above the quality of medical care. On the other hand, sometimes it may be advisable and even necessary for physicians to provide certain appliances or remedies without profit which patients can not procure from other sources.'

"Your committee recommends that the following be substituted in lieu thereof:

DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

'Sec. 8.—It is not unethical for a physician to prescribe or supply drugs, remedies, or ap-

pliances as long as there is no exploitation of the patient.' "

In reporting to the House the chairman of the Reference Committee explained that in the opinion of the Committee the Code of Ethics should be stated in broad principles rather than attempt to interpret principles in detail. In recommending the change in Section 8 the Committee emphasized that this section should be interpreted in line with Chapter I, Section 6, which reads: "The ethical physician, engaged in the practice of medicine, limits the sources of his income received from professional activities to service rendered the patient . . . "

Medical Practices Committee Report

The Reference Committee on Insurance and Medical Service, which considered two Board of Trustees reports on the Report of the Committee on Medical Practices, recommended endorsement of the Board's principal conclusions and recommendations. The House of Delegates, however, adopted a substitute motion postponing action until next December. The motion also called for distribution of the entire report of the Committee on Medical Practices to all delegates, so that they can study it carefully before the 1955 Clinical Meeting in Boston.

Internship Approval Programs

The House adopted the following statement presented by the Reference Committee on Medical Education and Hospitals:

"Your Committee has reviewed the report of the Council on Medical Education and Hospitals which includes a summary of the reports previously made to the House of Delegates by the Ad Hoc Committee on Internships and are in agreement with the Council that these conclusions and recommendations are eminently sound and that they should be incorporated into the principles and policies employed by the Council in the conduct of its internship approval programs including subsequent revisions of the Essentials of an Approved Internship.

"Your Committee wishes specifically to reaffirm the following recommendations of the Ad Hoc Committee on Internships:

"1) That a continuing study be made as to what should be the content of an internship; what constitutes sound clinical experience during the internship year.

"2) That the 'one-fourth rule' be adopted: Any internship program that in two successive years does not obtain one-fourth of its stated complement be disapproved for intern training. It was pointed out to your Committee in the hearings that statistical data compiled for a period of two years indicated that enforcement of this rule would have displaced only a few interns."

Hospital Accreditation

The same reference committee considered six resolutions on hospital accreditation and presented the following statement which was adopted by the House:

"Your reference committee has reviewed all these resolutions which in principle are similar and apparently reflect a widespread dissatisfaction with the present functioning of the Joint Commission on the Accreditation of Hospitals, possibly from bilateral misunderstandings. Therefore, your reference committee recommends that the Speaker of the House of Delegates be requested to appoint a special committee to review the functions of the Joint Commission on the Accreditation of Hospitals to consist of seven members, none of whom shall be members of the Council on Medical Education and Hospitals or the Joint Commission on the Accreditation of Hospitals. This special committee should be instructed to make an independent study or survey and report its findings and recommendations to the House of Delegates at the next annual meeting. All physicians and hospitals are urged to pass on to this special committee any observations or suggestions concerning the functioning of the Joint Commission on the Accreditation of Hospitals."

Polio Vaccine

The House passed three resolutions suggested by the Reference Committee on Hygiene, Public Health and Industrial Health in connection with discussion of the Salk polio vaccine and the introduction of new methods in the treatment or prevention of disease.

The first resolution reaffirmed "confidence in the established methods of announcing new and possibly beneficial methods in the treatment and prevention of disease" and also reaffirmed "the need for the presentation of reports on medical research before established scientific groups, allowing free discussion and criticism, and the publication of such reports, including methods employed and data acquired on which the results and conclusons are based, in recognized scientific publications."

The second resolution included the following policy statements:

"Resolved, that the American Medical Association go on record as disapproving the purchase and distribution of the Salk polio vaccine by any agency of the federal government except for those unable to procure it for themselves and that such necessary federal funds therefore be allocated to the various proper state agencies for such purpose; and be it further

"Resolved, that the American Medical Association urge the Congress of the United States to allow the Salk polio vaccine to be produced, distributed and administered in accordance with

past procedures on any new drug or vaccine."

The third resolution commended Dr. Salk as follows:

"Whereas, the physicians of this country recognize the great scientific achievement in isolating and perfecting a vaccine for the prevention of poliomyelitis by Dr. Jonas Salk; and

"Whereas, this vaccine is now being used to prevent poliomyelitis among many of our children; therefore be it

"Resolved, that the House of Delegates express its profound gratitude to Dr. Salk and its admiration for his monumental contribution to medincal science."

Miscellaneous Actions

Among a large number of actions on a wide variety of subjects, the House of Delegates also:

Commended the "Medic" television program;

Reaffirmed its previous recommendation that the United States withdraw from the International Labor Organization;

Approved the Headquarters Survey Report, which included the statement that "the only public relations program of any permanent value is the private and public relations of the individual doctor";

Expressed regret that the Hoover Commission saw fit to alter or eliminate some of the recommendations of its Medical Task Force;

Reaffirmed its opposition to extension of the Doctor Draft Law;

Recommended the creation of an A.M.A. Committee on Geriatrics;

Warned against the danger embodied in state legislative proposals designed to restrict the entire field of visual care to the profession of optometry.

Opening Session

Principal addresses at the Monday opening session of the House of Delegates were given by Dr. Walter B. Martin of Norfolk, Va., retiring A.M.A. president, and Dr. Elmer Hess of Erie, Pa., then president-elect. Dr. Martin declared that the basic philosophy of medicine has not changed and "our obligation is to bring the best that medicine can offer to the individual patient." Dr. Hess said that the nation's physicians must become leaders in a campaign to "overcome the ravages of mental illness" as well as in an "intensive campaign to eliminate the needless bloodshed" of traffic accidents.

Inaugural Program

"Medicine's Proclamation of Faith" was the theme of the Tuesday evening inaugural program, which was broadcast nationwide by the ABC Radio Network. Dr. Hess, in his inaugural address, said that "unless we are willing to give of ourselves and our faith, our science will avail us little." Dr. Norman Vincent Peale, eminent clergyman who was guest speaker on the inaugural program, pointed out that "the drawing together of medicine and religion is a step in helping man toward proper use of his God-given potentials and qualifications."

Election of Officers

The following officers were elected at the closing session, in addition to Dr. Murray, the new president-elect:

Dr. Millard D. Hill, Raleigh, N.C., vice president; Dr. George F. Lull, Chicago, secretary; Dr. J. J. Moore, Chicago, treasurer; Dr. E. Vincent Askey, Los Angeles, speaker of the House of Delegates, and Dr. Louis M. Orr, Orlando, Fla., vice speaker.

Dr. Gunnar Gundersen, La Crosse, Wis., was named chairman of the Board of Trustees to succeed Dr. Murray. Dr. James R. Reuling, Bayside, N.Y., was elected to fill Dr. Murray's term on the Board. Re-elected as trustees were Dr. L. W. Larson, Bismarsk, N. D., and Dr. T. P. Murdock, Meriden, Conn.

Dr. Louis A. Buie, Rochester, Minn., was named by Dr. Hess to succeed himself on the Judicial Council. Elected to the Council on Medical Education and Hospitals were Dr. Harlan English, Danville, Ill., and Dr. James M. Faulkner, Boston, the latter succeeding himself. Re-elected to the Council on Medical Service was Dr. H. B. Mulholland, Charlottesville, Va. Elected to the same Council were Dr. A. C. Scott, Temple, Tex., and Dr. R. B. Chrisman Jr., replacing Dr. Orr.

Dr. B. E. Pickett, Sr., Carrizo Springs, Tex., was re-elected to the Council on Constitution and Bylaws, and Dr. Warren Furey was named to the same Council to replace Dr. James Stevenson, Tulsa, Okla.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

TENNESSEE VALLEY MEDICAL ASSEMBLY

The Tennessee Valley Medical Assembly (sponsored by the Chattanooga and Hamilton County Medical Society) will hold a meeting October 3 and October 4, 1955, at the Read House, Chattanooga, Tennessee.

There will be four sessions and among the speakers will be Dr. Edgar Hull and Dr. Alton Ochsner.

Attendance at the Assembly, it is stated, provides acceptable medical study requirements for continued membership in the American Academy of General Practice.

Registration fee is $15, which includes the banquet on October 3. Early registration is urged and should be sent to: Chattanoogans, Inc., 819 Broad Street, Chattanooga, Tennessee.

DR. HAYES ATTENDS ATLANTIC CITY MEETING

Dr. Daniel W. Hayes, who is Governor for the State of Louisiana and senior delegate to the American Diabetes Association for Louisiana, attended the Board of Governors meeting as well as the annual meeting of the American Diabetes Association in Atlantic City, June 3-5. He is chairman of the Committee on Diabetes for the Louisiana State Medical Society as well as chairman of the Committee for the Orleans Parish Medical Society.

A.M.A. COMMITTEE REPORT ON FEE SPLITTING PROBLEMS

A special committee of the American Medical Association at the Atlantic City meeting on June 6, 1955, offered a four-point program to correct the basic economic causes of fee splitting within the profession.

The Committee on Medical Practices, which was appointed by the A.M.A. Board of Trustees early in 1954, recommended that:

1. A special committee be created to work on a relative value scale, based on points and not dollars, for the whole of the practice of medicine and surgery. It would indicate the proper relation between fees for various medical and surgical specialties.

2. A program of public education on the value of diagnostic and medical work be fostered to increase the public's appreciation of non-surgical work.

3. The American Medical Association encourage the various specialty boards in medicine to reappraise the value of their regulations restricting the practice of those seeking or holding board certificates.

4. The American Medical Association continue to discourage arbitrary restrictions by hospitals against general practitioners.

Dr. Dwight H. Murray, Napa, Calif., President-elect of the A.M.A. Board of Trustees, termed the report "the most constructive and exhaustive relating to the problem of fee splitting ever written.

UROLOGY AWARD

The American Urological Association offers an annual award of $1000 (first prize of $500, second prize $300 and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been graduated not more than ten years, and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Statler Hotel, Boston, Massachusetts, May 28-31, 1956.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1955.

SCHEDULE OF LABORATORY REFRESHER TRAINING COURSES DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

July 1955 - June 1956

Dates	Course No.	Courses	Duration
Sept. 12-23	8.40	Laboratory Diagnosis of Bacterial Diseases Part 1. General Bacteriology	2 wks.
Sept. 12 to Oct. 7	8.00	Laboratory Diagnosis of Parasitic Diseases Part 1. Intestinal Parasites	4 wks.
Sept. 26 to Oct. 7	8.41	Laboratory Diagnosis of Bacterial Diseases Part 2. General Bacteriology	2 wks.
Oct. 10-28	8.01	Laboratory Diagnosis of Parasitic Diseases Part 2. Blood Parasites	3 wks.
Oct. 17-28	8.20	Laboratory Diagnosis of Viral and Rickettsial Diseases	2 wks.
Oct. 17-28	8.50	Laboratory Diagnosis of Bacterial Diseases Enteric Bacteriology	2 wks.
Oct. 31 to Nov. 4	8.26	Laboratory Diagnosis of Rabies	1 wk.
Oct. 31 to Nov. 11	8.15	Laboratory Methods in Medical Mycology Part 1. Cutaneous Pathogenic Fungi	2 wks.
Nov. 14-25	8.16	Laboratory Methods in Medical Mycology Part 2. Subcutaneous and Systemic Fungi *	2 wks.
Nov. 14-25	8.55	Laboratory Diagnosis of Tuberculosis	2 wks.
Nov. 28 to Dec. 9	8.17	Laboratory Methods in the Study of Pulmonary Mycoses	2 wks.
Dec. 12-16	9.40	Laboratory Diagnostic Methods in Veterinary Mycology	1 wk.
Mar. 12-23	8.20	Laboratory Diagnosis of Viral and Rickettsial Diseases	2 wks.
Mar. 26-30	8.26	Laboratory Diagnosis of Rabies	1 wk.
	8.05	Laboratory Diagnosis of Malaria **	2 wks.
	8.21	Virus Isolation and Identification Techniques **	2-4 wks.
	8.42	Typing of *Corynebacterium diphtheriae* **	1 wk.
	8.51	Special Problems in Enteric Bacteriology **	2 wks.
	8.52	Phage Typing of *Salmonella typhosa* **	1 wk.

* Completion of Course 8.15 or equivalent education or experience is a prerequisite.

** Courses offered by special arrangement only.

Information and application forms may be obtained from Laboratory Training Services, U. S. Public Health Service, P. O. Box 185, Chamblee, Georgia.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.

The Part II Examinations of the American Board of Obstetrics and Gynecology were held May 12 through 20 at the Edgewater Beach Hotel in Chicago, Illinois; 387 candidates were examined.

After twenty-five years of continuous service, Dr. Walter T. Dannreuther was succeeded as President of the Board by Dr. F. Bayard Carter. Dr. Dannreuther will continue with the Board as a member of the Executive Committee.

After many years of faithful service as a Director, the resignation of Dr. Willard R. Cooke was accepted with regret and *Dr. Conrad G. Collins of New Orleans* was elected to fill his unexpired term.

Applications for certification for the 1926 Part I Examinations are now being accepted. Candidates are urged to make such application as early as possible, and before October 1, 1955, through Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6, Ohio.

AIR CONDITIONING *

The wide differential in temperature between summer climates and some air-conditioned interiors poses a possible health question. "The chief difficulty centers about the 'comings and goings' of occupants of this artificial climate." In winter, the human body becomes adjusted so that persons leaving interiors heated to about 80 degrees (Fahrenheit) can enter a near-zero environment with only the addition of an overcoat and hat. In summer, however, moving from air-conditioned environments with relatively low temperatures into exteriors of high temperatures may result in a condition of "thermal shock." The ideal solution of a three to four stage transition is unfortunately impractical. "Under the circumstances described, much may be accomplished by clothing adjustments. In many air-conditioned spaces, particularly if there is excessive air motion, added garments are necessary, especially among women. The divestment of these garments aids the physiological state on re-entering the hot outer air. Humidification of the air is less important to health than was earlier con-

tended. As to comfort, the degree of humidity may be more important but still is not fundamental. Some investigators, with respect to air conditioning in summer, advise merely dehumidifying the air to a low point without effort to lower temperatures, but this may give rise to an unpleasant sense of chilling owing to increased evaporation. In any event, a humidity between 40 and 60% is regarded with favor."

* QUERIES and MINOR NOTES: Air conditioning, *Journal of the American Medical Association* 157:1265 (April 2) 1955.

AMERICAN DERMATOLOGICAL ASSOCIATION, INC. ANNUAL PRIZE ESSAY CONTEST

The American Dermatological Association is again offering a series of prizes for the best essays submitted for original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. The purpose of this contest is to stimulate investigators to original work in these fields. Cash prizes will be awarded as follows: Five hundred dollars, four hundred dollars, three hundred dollars and two hundred dollars for first, second, third and fourth place, respectively.

Manuscripts typed in English with double spacing and ample margins as for publication, together with illustrations, charts and tablets, all of which must be in triplicate, are to be submitted *not later than November 15, 1955.*

The manuscripts should be sent to *Dr. J. Lamar Callaway, Secretary, American Dermatological Association, Duke Hospital, Durham, North Carolina.* Those which are incomplete in any of the above respects will not be considered. Manuscripts should be limited to ten thousand words or less and the time of presentation of prize essay shall not exceed thirty minutes. In order to aid fair judgment, papers should be submitted under a nom de plume with no information anywhere in the paper as to the institution or clinic where the work was done.

SHINGLES PATIENTS RESPOND TO GAMMA GLOBULIN

Five of six patients treated with gamma globulin were relieved of painful symptoms of herpes zoster, also known as shingles, a Florida physician reported.

Dr. I. Irving Weintraub, Gainesville, reported on the cases in the April 30 Journal of the American Medical Association. Gamma globulin has been used previously in treatment of measles.

Dr. Weintraub said in four of the six patients, a "dramatic relief of pain occurred within the first 24 hours." Skin outbreaks were stopped by the treatment and no further infection was seen. A patient whose skin eruptions had been present for seven days before treatment was relieved of pain in 48 hours. Complete healing of the eruptions required from one to three weeks.

Only one patient, with nerve involvement, did not respond to treatment, Dr. Weintraub said. All patients, except one hospitalized for bleeding skin eruptions, continued to work in spite of "extensive involvement" in some cases.

WHY INJECTIONS HURT

Practically everyone at some time or another has had an injection and practically everyone knows it hurts sometimes. A New York City physician today explained just why—and what can be done about it.

It's not just the jab of the needle as it punctures the skin that causes the trouble, according to Dr. Janet Travell, of Cornell University Medical College. Her report on injection pain appeared in the June 4 Journal of the American Medical Association.

There are three reasons why the injection hurts, she said. One is mechanical—the needling, or sudden distention of tissues from rapid injection of the fluid. The others are irritation—due either to antiseptic on the skin or to the injected fluid itself, and abnormal sensitivity of the skin or the muscle.

She strongly disagreed with the notion "that some pain is to be expected from the mere jab of the hypodermic needle," and said "given a non-irritant solution" injections can be made painless.

SYNTHETIC WETTING AGENT FOUND TO HAVE OTHER USE

A synthetic wetting agent which can make a duck sink also can be a useful laxative, Drs. James L. Wilson and David G. Dickinson, Ann Arbor, reported on the unusual use of the material in the recent May 28 Journal of the American Medical Association.

The material, dioctyl sodium sulfosuccinate (Aerosol O.T.) was developed 15 years ago. It was shown that a small concentration of this material in water made it so "wet" that ducks in the water sank.

The Michigan physicians said that the material's usefulness in patients suffering even severe constipation was based on its ability to mix water and fatty material and therefore dissolve hard masses.

They said they had used the material for many hundreds of patients in the past 12 years and found it has "wide usefulness" because a good laxative effect can be obtained without the danger of ill effects, even when used for long periods.

It is especially useful in children suffering disorders of the intestinal tract. They also have found it helps relieve constipation in patients with poliomyelitis, especially the severely paralyzed who require artificial lungs.

PHYSICIAN WARNS AGAINST VACATION DRIVING DANGER

Beginning of vacation time brings a warning against long-distance, non-stop driving from a Washington, D. C. physician.

Dr. Carl J. Potthoff said three-fifths of driver defects leading to accidents are fatigue and falling asleep. Writing in the May Today's Health magazine, published by the American Medical Association, Dr. Potthoff said one-fifth of drivers involved in fatal accidents are out-of-state residents but in vacation time the proportion is much higher.

"Drivers who set long mileage schedules for each day usually are fast drivers; speed is the leading cause of traffic accidents and as it increases the injuries are greater in the case of accident," he said.

"Accidents sustained far from home cause much-increased difficulty," he said. "Contacts are with strangers: garage service men, physicians, lawyers, police officers. Injuries may require a long stay at the local hospital. It may be necessary to summon distant relatives. Police or civil action may require a return many months later.

DOCTOR TELLS HOW TO AVOID ULCERS

Anyone can get an ulcer. It's not a merit badge for the hard-working man, but a common disease that can strike anybody who doesn't take the trouble to avoid it.

The main strains that lead to ulcers are emotional, but most ulcers (if not all of them) can be warded off, according to Dr. John E. Eichenlaub, of the University of Minnesota School of Medicine. He tells how to avoid ulcers in a recent (October) Today's Health magazine, published by the American Medical Association.

"There's nothing mysterious about an ulcer. It is a hole in the protective lining of the stomach or upper intestine," he said. "Through this hole, the acid and digestive juice made in the stomach wall eat at the tender underlying tissue.

"But this doesn't just happen. It's the end result of two physical and chemical changes."

The changes come from the stomach's overworking—making too much acid and juice; and from a loss of vitality in a patch of the stomach wall or upper intestine. Both these things happen mainly because of certain kinds of emotional stress.

ASPIRIN MOST EFFECTIVE IN TREATING POLYARTHRITIS

Aspirin remains the drug of choice in the treatment of polyarthritis accompanying rheumatic fever and "may be of some benefit in carditis," according to Dr. Currier McEwen of New York University School of Medicine.

After some 30 years of medical agreement concerning aspirin's ineffectiveness against rheumatic heart damage, Dr. McEwen observes that the issue is now being re-examined. Prompting the reappraisal, he states in *Medical Clinics of North America* (39:353, 1955), are the continuing reports of the international cooperative study of rheumatic fever. This study found that aspirin is as effective in treating the disease as cortisone and ACTH. Since most experts agree that cortisone and corticotropine are of some value in carditis, it "naturally suggests the possibility that salicylates, too, may be of some benefit," Dr. McEwen says.

Another indication, he notes, is that "rebounds similar to those seen when a hormone is stopped occur also when salicylates are rapidly discontinued." The rebound after hormone therapy can be at least partially suppressed by aspirin, he adds, citing a recent study.

BURN OINTMENT MADE FROM ALOE PLANT

An ointment made from the tropical aloe vera plant, proven in a number of medical tests to be highly effective in treating sunburn and burns of all kinds, is now being distributed to retail drug stores around the country. Heretofore it had been available only to physicians, hospitals and industrial clinics.

Known as Collins Aloe Ointment, thousands of applications under strict medical supervision have proven that it is highly effective in reducing pain, and healing the skin, in cases of burns caused from the sun, hot metal, hot fat, electricity, friction, steam scalds and other causes, and for minor skin ulcerations not complicated by bloodstream infection.

The most significant results in healing burns were recently reported in The Bulletin of the Biological Sciences Foundation, Ltd., which stated, "Through carefully controlled research it has now been definitely established that an ointment, made principally from one of the oldest known medical remedies, Aloe vera, is the most satisfactory and successful remedy for the treatment of the devastating skin and tissue damage caused by atomic bomb explosions in the treatment of burns resulting from exposure to beta irradiation. Heretofore surgical excision of the involved area, followed by painful plastic repair, has been considered by many as the only satisfactory method of treatment."

EXAMINATION COULD REDUCE TOP CAUSES OF BLINDNESS

Eye tests for all children about their third birthday and regular examinations for older persons are "the only hope" of preventing the two greatest causes of blindness in the U.S., a Boston physician said recently.

Dr. Trygve Gundersen, an ophthalmologist, said

early detection is essential in reducing cases of glaucoma and amblyopia ex anopsia. He said an estimated 1,130,000 persons have unrecognized glaucoma and perhaps more than a million are blind in one eye from disuse. How many of the glaucoma patients may become totally blind cannot be estimated, but the number "must be high," he said. Many of the disuse patients can live with no great handicap—but would be completely sightless if injury or disease blinded their one good eye.

Glaucoma is a disease marked by strong pressure inside the eye which hardens it and produces a dull grey appearance. Amblyopia ex anopsia is a dimness of vision resulting from long disuse of the eye, which shows no visible impairment. It most frequently occurs among children with strabismus, or crossed eyes.

BOOK REVIEWS

Treatment of Mental Disorder; by Leo Alexander, M. D., Philadelphia, W. B. Saunders Company, 1953, Pp. 507, Price $10.00.

This book is an attempt by the author to present an eclectic viewpoint regarding the therapy of psychiatric disorders. Dr. Alexander states that "it is difficult for me to understand why so many adherents of physical treatment should have failed to avail themselves of the cup of psychodynamic understanding and why so many in the field of psychodynamics should disdainfully reject the wine of physical treatment with a vehemence comparable to that of the crusading ascetic". He emphasizes that his text is an attempt to blend dynamic and physical therapy. However as the volume unfolds, the author's biased viewpoint is characterized by his statement that "This trend (reliance upon psychotherapy alone) goes on in spite of the fact that no scientific proof has been established that the major mental illnesses are at all significantly modifiable by purely psychological means". Some intellectualization regarding dynamic psychotherapy is utilized by the author, but emphasis is on physical concepts. This is somewhat understandable in view of Dr. Alexander's many years of training, experience and research in the physical treatment of mental disorders.

The symptoms of anxiety and depression are stressed, and the point made that anxiety is worsened by electroshock therapy and depression is strikingly relieved. There are numerous excellent statistical studies in the book, both from the author's long experience and from various other publications. Dr. Alexander views lobotomy as a treatment to be utilized only as a last resort. He warns against the fallacy of looking at the diagnosis only and overlooking the stage of illness and the mechanisms susceptible to modification.

In general the volume is an important contribution to psychiatric literature and should be of considerable interest to the psychiatrist.

GENE USDIN, M. D.

The Hepatic Circulation and Portal Hypertension; by Charles G. Child, III, M. D., W. B. Saunders Company, Philadelphia, Pp. 444, Price $12.00.

In the preface to this monograph, the author states, "It is my hope that, as published, this volume will enable the basic scientist to appreciate some of the clinical problems which confront the physician and surgeon in their efforts to manage successfully patients with hepatic disease and related disorders. Conversely, I believe that clinical scientists may benefit from a broader understanding of the fundamental problems involved in any disease process. Briefly stated, the major objective in writing this book is to help close the gap in time which always seems to exist between discoveries in the basic sciences and their clinical application to disease."

The author has achieved his objectives in an admirable fashion. He has brought together an unusual amount of pertinent material on the liver and has presented it in an interesting and critical manner. He proceeds from a discussion of the historical background to a review of the gross and microscopic anatomy and the circulation of the liver. The chapter on the "Normal Physiology of the Hepatic Vasculature" is particularly well done. The second part of the book is concerned with various aspects of hepatic disease and with the role of the liver in various pathologic states, such as portal hypertension, etc. This section and seven appendices give details of various experimental and clinical approaches to the study of liver function and hepatic disease. The bibliography is complete and unusually up-to-date. This small monograph should be considered as one of the most complete and valuable sources of information on modern approaches to the study and evaluation of liver function and disease.

H. S. MAYERSON, Ph. D.

PUBLICATIONS RECEIVED

The Biological Sciences Foundation, Ltd., Washington: TEA—A Symposium on the Pharmacology and the Physiologic and Psychologic Effects of Tea, edited by Henry J. Klaunberg, Ph. D.; The Medical Significance of Anxiety, by Richard L. Jinkins, M. D.

Lea & Febiger, Phila.: A Primer of Electrocardiography, by George E. Burch, M. D., and Travis Winsor, M. D. (3rd edit.).

Charles C Thomas, Publisher, Springfield, Ill.: Psychocutaneous Medicine, by Maximilian E. Obermayer, M. D., edited by Arthur C. Curtis, M. D.; Treatment in Psychiatry, by Oskar Diethelm, M. D. (3rd edit.).

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3. Inability to Stand on One Foot

A patient's inability to stand on one foot without lurching may be a helpful test in distinguishing between "dizziness" which is purely psychogenic and that which is of organic origin.

False dizziness is a sensation of sinking or lightheadedness which is often of psychogenic origin. It should be distinguished from true "dizziness" or vertigo[1] in which there is a definite whirling, moving sensation.

Unsteadiness, lightheadedness and similar manifestations of false dizziness[2] may be psychogenic or the result of arteriosclerosis, hypoglycemia, drug sensitivity and general metabolic disturbances such as anemia and malnutrition. Hypertension is often the cause of these symptoms.

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1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

2. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.

3. Kunkle, E. C.: Central Causes of Vertigo, J. South Carolina M. A. *50*:161 (June) 1954.

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Bumbalo, T. S., Gustina, F. J. and Oleksiak, R. E.: J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.: Brit. M. J. 2:755, 1953.

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Brown, H. W.: J. Pediat. 45:419, 1954.

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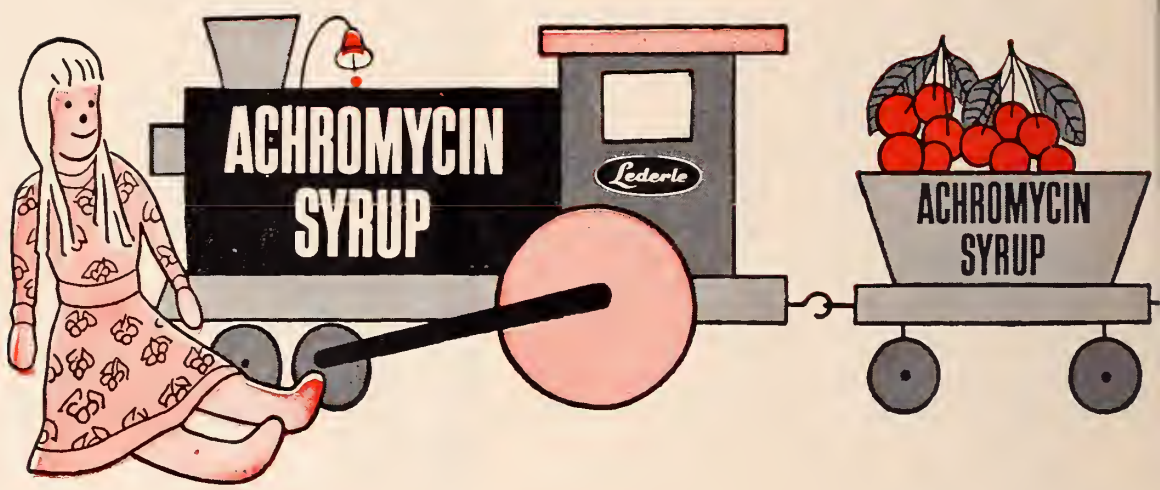
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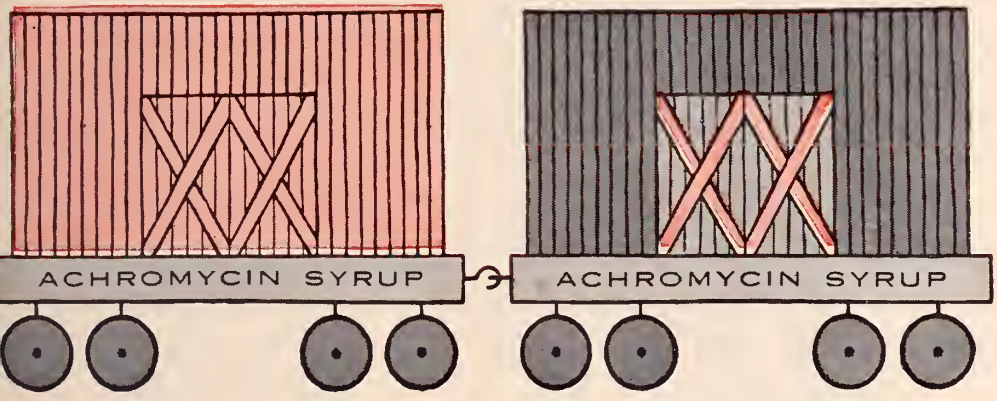
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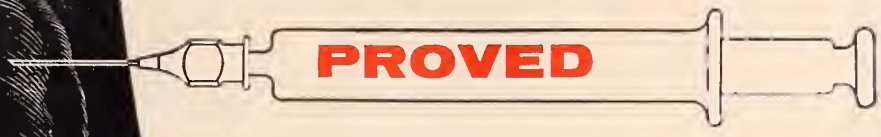
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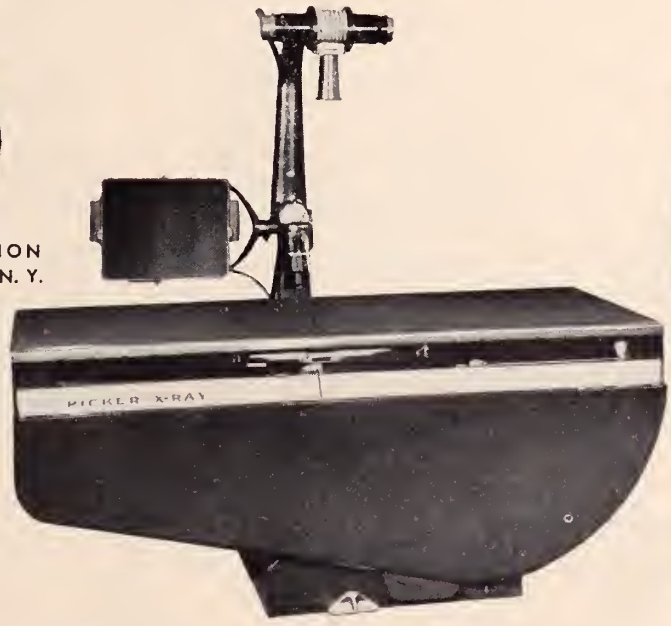
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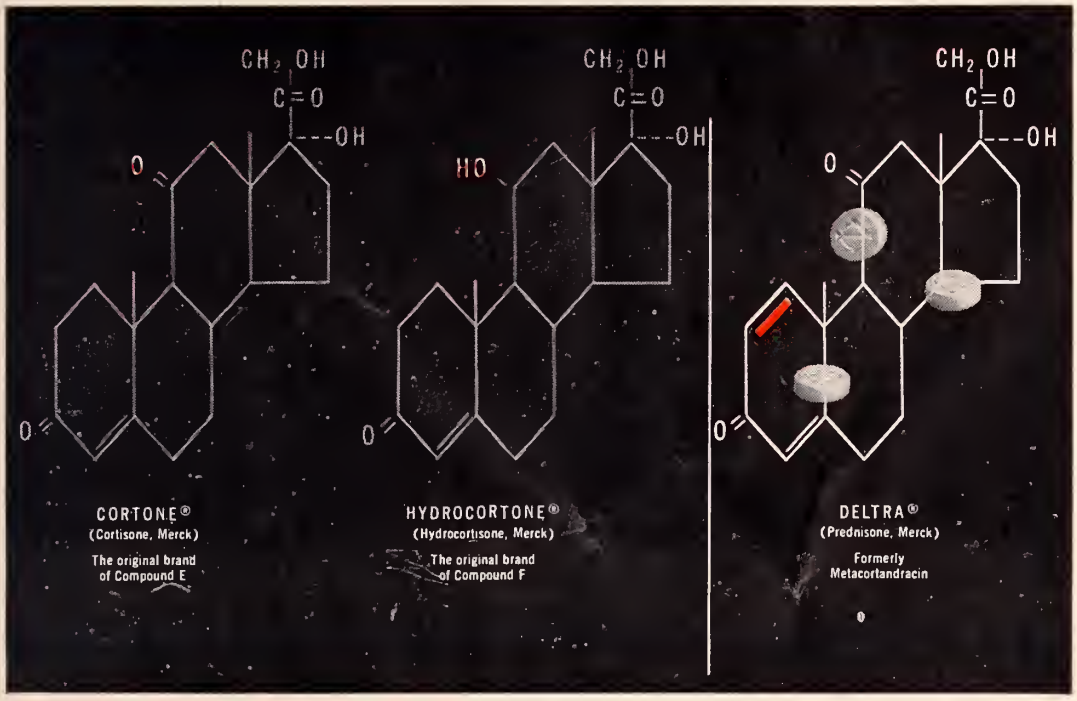
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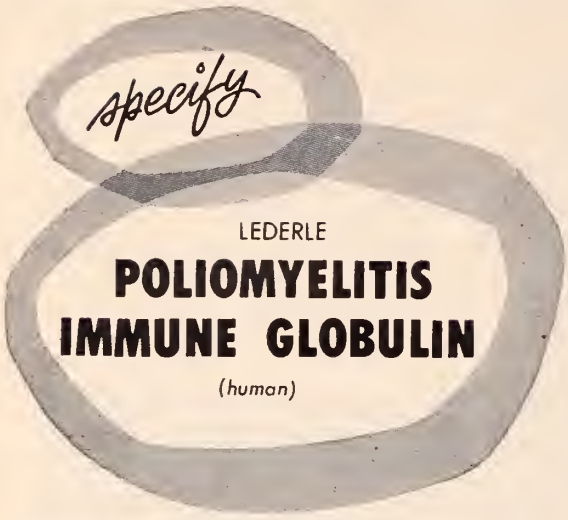
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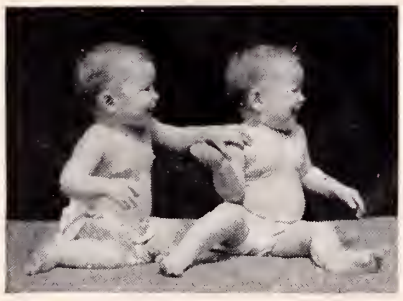


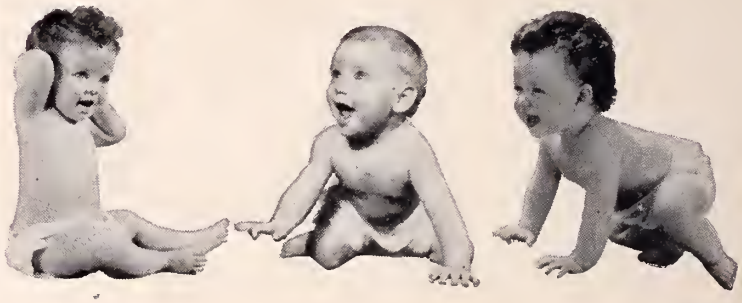
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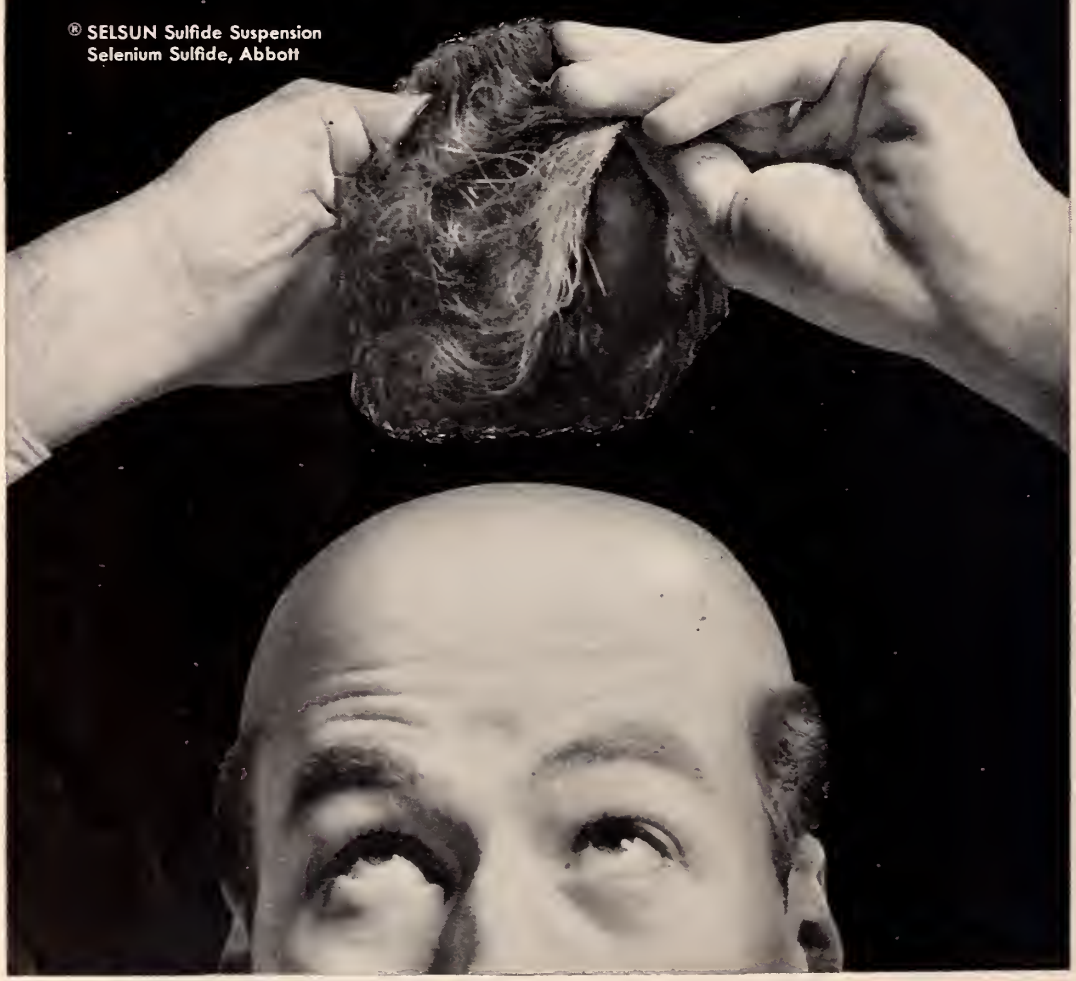
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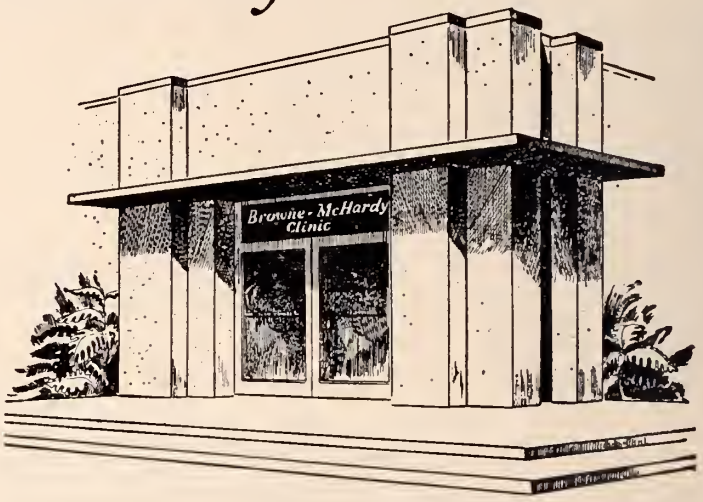
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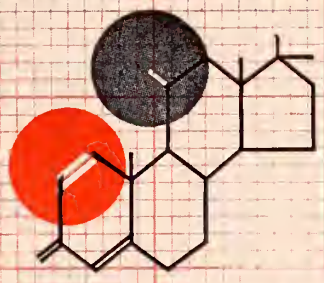
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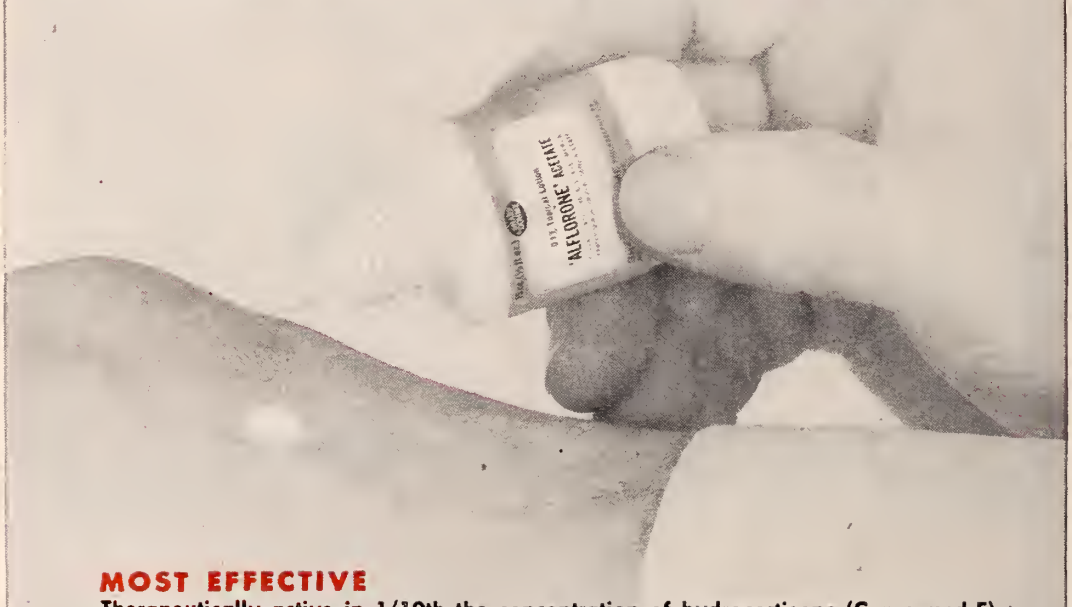
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The old concept of the "Normal Tissue Committee" has been tried in the course of time and found wanting. Normal tissue removal is sometimes justified; on the other hand, surgical removal of diseased tissue is not always necessary. With a progress in the scientific attitude toward modern staff committee work, the "Unjustified Surgery Committee" came into being. Here all surgical cases are scrutinized whether tissue is removed or not. Viz: Pre- and post-operative diagnoses are as important as the separation of tissue by the surgeon's knife. Good medicine is the pass-word.

The newer concept is the Professional Audit. Although its eye is still on the surgeon, the Surgical Audit Committee is but one of many self-evaluating committees of the medical staff. With a medical staff's truer scientific attitude to the problem of self-evaluation which faces it, the work in all services, including pathology, is now subject to staff evaluation. It is unscientific to rate a hospital by the work of the surgeons alone.

The Joint Committee insists that the committee be active and not just a list of names on paper, i.e. "a tissue paper committee." The viewpoint of all audit committees must be broad and clinical. Without action they can be neither.

The pathologist is usually a member of the Surgical Audit Committee but the American College of Surgeons emphasizes that he should not be the chairman. Further, the staffs of more and more hospitals are writing into the hospital By-laws that the pathologist should serve as an **ex-officio** (non-voting) member in the capacity of consultant.

Justification of an operation can rarely be made through a microscope.

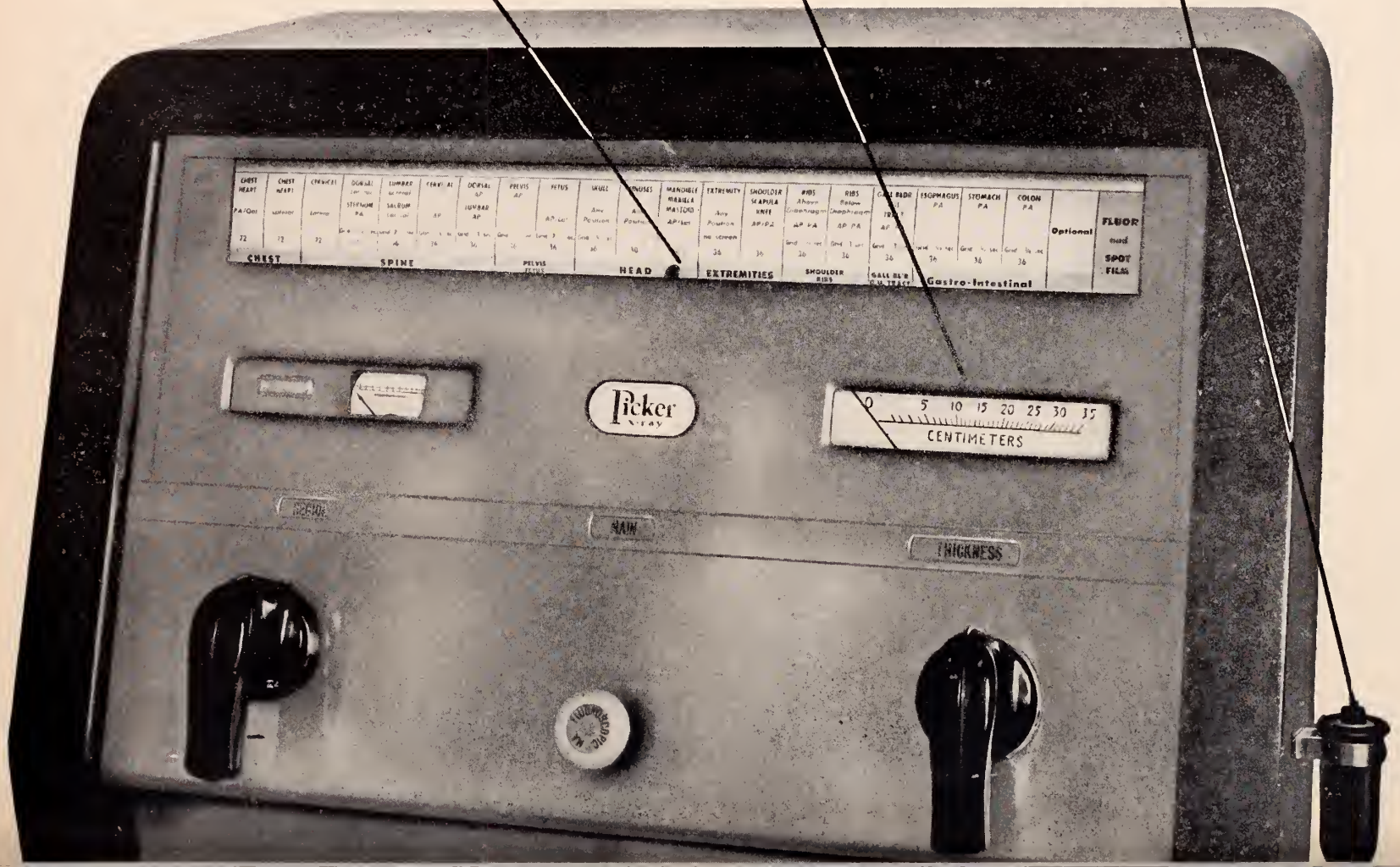
The Pathologist's Report is the beginning, not the end, of surgical evaluation, the Regents of the American College of Surgery reported in Chicago in October, 1953 (The Modern Hospital, November, 1953).

PATHOLOGISTS OF LOUISIANA PLEDGE THEIR COOPERATION WITH THE OTHER PHYSICIANS WHO FORM THE STAFFS OF LOUISIANA HOSPITALS IN MEETING THE SELF-EVALUATION PROGRAM REQUIRED BY THE JOINT COMMISSION ON ACREDITATION OF HOSPITALS.

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THE COUNTY MEDICAL PUBLIC RELATIONS MANUAL *

LEO E. BROWN †
CHICAGO, ILLINOIS

This is television station AMA-PR coming to you this morning from the Ball Room of the Roosevelt Hotel, in New Orleans, by popular demand—a re-broadcast of a portion of the Public Relations Conference presented at the AMA Clinical meeting in Miami, Florida.

The title of this presentation is *Medicine in the Public Eye*, taken from the AMA's new publication, *The County Medical Public Relations Manual.* Physicians and their medical societies are constantly in the "public eye." This is desirable only if what they see results in favorable public attitudes.

For every medical PR chairman who has ever wished for a way to open the door to a warmer reception by the community—to be favorably reflected in the "public eye"—we present to you *The County Medical Public Relations Manual.*

Designed expressly to show county societies how to put their best PR foot forward—it is the result of years of research into successful PR programs across the nation. This manual is not theory—it contains practical public relations information, explains how to organize for PR action, and outlines dozens of projects which medical societies can conduct to win added respect and renewed confidence of the American people.

I want to discuss this PR bible with you in terms of its contents and how it may be used by you as PR disciples in encouraging the medical profession "to preach what they practice"—thus gaining salvation in the "public eye." In this manual we have distilled many success stories into a step-by-step year 'round plan of PR action for your county medical society. It may be considered as a complete PR primer—but it is more than that—it is a medical PR encyclopedia.

For those county societies which are just getting started, it outlines how to organize for action. It discusses the selection of PR committee chairmen, tenure of office, sub-committees, as well as policy and lines of authority.

This is the manual that state medical societies and county PR chairmen have yearned for. It not only reports what other societies have done, it tells what can and should be done—but even more important—how to do it.

The manual consists of what we call "The Basic Eight" — eight activities of medicine which are in the "public eye," which—if activated—will do much to place medicine properly focused in the "public eye."

The basic eight program consists of emergency call systems, mediation committees, press relations, speakers bureaus, membership indoctrination, guarantees of medical care, public service projects and

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† Director of Public Relations, American Medical Association.

citizenship projects.

Perhaps some of you think, "So what? There's nothing new about these basic eight programs. We've all heard about them before." But so have we heard of the ten commandments and still it is necessary for us to be constantly reminded of their significance if we are to maintain both public and self respect.

EMERGENCY CALL SYSTEMS

First, let's discuss emergency call systems. In the public mind, when emergency strikes, the first questions asked by a distraught and frequently frightened individual are who, where, how and when can I get a doctor. No, there is nothing new about this project, except that there are still many communities without such service and others whose programs need "transfusions."

If the suggestions and recommendations on emergency call services contained in the manual are carefully executed, medicine will be seen in the "public eye."

MEDIATION COMMITTEES

Dissatisfaction with a doctor's services, his fees or some other aspect of medical care causes complaints which undermine the confidence of the public in our medical care system. Even though many of these complaints are unjustified or stem from misunderstandings, their existence creates a serious medical public relations problem.

You'll find that mediation committees are an integral part of any medical PR program, consequently the second division in the manual is devoted to its function.

Sure, I know many of your societies have established mediation committees—but how well do they function? Do people know about this service? Is it simply a "kangaroo court", a "whitewash", and are the complaints handled promptly and judiciously?

Several months ago, *Look* published the article entitled "Are Your Doctor Bills Padded?" Letters to the editor overwhelmingly supported the writer, several of which had this to say:

"After filing my complaint with the county society, I endeavored by letter and telephone calls to secure an answer. At the end of sixteen full months the physician filed suit for the balance of the $80 which he claimed was due him. Eventually, the matter was handled in court . . . courts do not attempt to judge the manner in which a doctor handles a case, and the account was held payable. A complaint was filed with the state medical society judicial council against the county society for failure to act during the sixteen months. The state council . . . contacted the physician against whom the complaint was originally filed and then did not even have the courtesy to advise that, based on the physicians statement, they were closing the case."

Another writer had this to say:

"The AMA says, 'talk over your bills with your doctor and if you still feel he has overcharged, talk it over with your local mediation board.' I did just that. A board of disinterested doctors considered the case of a patient vs. a brother doctor. Five months later, this eminent board reached the following decision: 'Since the fee was prearranged, you are obliged to pay it.' When you are afraid of cancer and of dying, you do not haggle over a fee. . . ."

The mere existence of mediation committees generates a PR problem. Yet, they can be entered on the "credit side of the ledger" if operated efficiently and conscientiously.

While we realize that some irritations may never be brought to the attention of the mediation committee these accumulative annoyances do tend to create a negative attitude toward the profession.

How county and state society mediation committees function, committee membership, authority, hearings, appeals and the value of publicizing this service to the public are discussed in this new PR manual for county medical societies.

PRESS RELATIONS

"Why People Don't Like Doctors" . . . was the headline of Dorothy Thompson's column several months ago. Taking off on the comments made by a doctor, in what was supposed to be a closed meeting of a

state society, Miss Thompson proceeded to vehemently denounce certain medical practices which she had not experienced with her own doctor but which she had heard about from other people.

I mention this only to emphasize the importance of the next section of our manual—press relations.

Newspapers, radio, and TV stations are featuring medical science news more than ever before because of increased public interest. Whether or not these stories are accurate and friendly to medicine depends to a large extent upon the kind of relations which physicians and their local medical societies maintain with the press. We frequently hear complaints from doctors that newspapers feature inaccurate reporting of medical stories, that they "sensationalize" medical reports, and that they often jump the gun on premature medical findings. Even worse, they generalize on unethical practice reports and incriminate, unjustifiably, all physicians and the medical profession.

Some may think that a bad press does not reflect individually on each doctor, and good or bad press relations are inconsequential as long as he, himself, is above reproach. Let me assure you, however, that there is a difference.

How to develop good press relations, medical press codes, the press and the principles of medical ethics, utilizing public information channels, are just some of the topics discussed under the heading of press relations in the manual.

To change this picture of damaging headline and stories to more favorable ones it is important that we develop a close liaison with the public press—thus, as the eyes of the American people scan the daily press, the true dedication of medicine will be revealed in the "public eye."

SPEAKERS BUREAUS

As public interest in medical subjects grows, the need for authentic health information, presented in simple, understandable terms, becomes increasingly apparent. The typical family desires the answers to questions on fees, epidemics, health problems, and medical careers. The medical profession has the responsibility of answering these questions, as discussed in the next section of our manual—speakers bureaus.

Organization, promotion, and maintenance are among the "gems of wisdom" contained in the county society manual. Although it is impossible to guarantee as penetrating an impression through speakers bureaus as may be experienced in other activities, the doctors who contribute their time and speaking talents to bring much wanted information to the public are bound to make a favorable impression.

MEMBERSHIP INDOCTRINATION

No public relations program can be successful unless it has the cooperation of the entire medical society membership. Herein lies one of medicine's greatest weaknesses. Too often members are inactive, do not attend meetings and are uninformed about society activities. Lack of unity within a society leads to disinterest and the disintegration of its program.

Ofttimes when a new member is taken into the county medical society, he stands alone with little guidance or cooperation from the other members. He feels like a lost "sheep," friendless and forgotten. With less than half of our medical PR team playing, every effort should be exerted toward the proper indoctrination of new members. Our manual devotes a complete section to indoctrination of society members.

A strong society is a society in which each member participates with enthusiasm because he is aware of the benefits of organized medicine. We need every member on the team participating.

Indeed, as a society member, each physician should stand united with his colleagues, to promote the science and art of medicine and the betterment of public health.

PUBLIC SERVICE PROJECTS

Several months ago, a hurried-up call from an eastern city informed me that they were up to their necks on a heart-throb case and had just learned that an

appeal was to be made on "Strike it Rich" that evening. After getting the facts of the case—which involved doctors in cities 1200 miles apart—I called Walt Framer, the producer of the show. He read to me a letter from the mayor of the city involved, who had requested that the mother be permitted to make her TV appeal for funds to cover the cost of the $1500 operation. After explaining the facts of the case—that the operating surgeons' bill had been quoted at $200 and the four-man surgical team had never received more than $450 for the delicate operation, furthermore, that the local newspaper had already raised $3500, a figure which was later reported to be in excess of $10,000—the scheduled TV appearance was promptly cancelled.

Nevertheless, the column inches in the local press continued to mount, leaving the readers with the impression that little Marjorie's right to health and happiness was being denied by the lack of money.

That, of course, is a grossly erroneous picture in the "public eye". We agree that medical service should be made available to all—as was offered in the case I mentioned—but where no formal program is in effect we find the medical profession on "the short end of the stick."

We have outlined the plans for providing the services of a physician to all deserving people who need it, under the title providing medical care for all regardless of ability to pay. The medical profession is not expected to assume the responsibilities of hospitalization and expensive drugs, but in addition to their services, they should provide guidance as to other community sources available. While formal programs of this type have had some opposition from within the profession, it cannot be denied that where they have been developed, the public relations impact has been terrific.

PUBLIC SERVICE

Over the years, the demands of medical practice have increased: Physicians have relinquished their leadership in many community activities—activities in which their medical knowledge and guidance is highly important. Physicians are medical men, but they are obligated to shoulder their share of community responsibilities. An active interest in community service projects is another public relations activity that can influence the picture of the medical profession in the "public eye."

Physicians, within their county medical society, should not rest content with the solution of their own internal professional problems. As a member of the community, he is expected to exert his leadership in making his community not only a healthier but also a happier place in which to live. Good public relations rests upon the doctors' sincere desire to enter into community activities and thus the reason for devoting a special section in our manual to public service projects.

We should examine our communities with the same regard for careful diagnosis as radiologists were once accused of doing.

Public service projects such as school health, disease detection drives, immunization programs, safety campaigns and many others are discussed in this manual.

CITIZENSHIP PROJECTS

Closely related to the county society's interests in the field of public service are its interests in activities which more logically come under the title of citizenship and have been so listed in the manual.

The value of citizenship activities cannot be underestimated in the gauging of public esteem for the medical profession.

Projects promoting church and school, getting out the vote, holding public office and other civic interests are as much the responsibility of the doctor as of other good citizens. In this respect, we have outlined some of the programs in which doctors should participate. This chapter is entitled citizenship activities. Discussed under this title are such subjects as the doctor's responsibility as a leading citizen, participation in service clubs, chambers of commerce, good government campaigns and an interest in legislative matters.

All of these activities reflect favorably upon you, the physician, and all organized medicine. Participation in local citizen-

ship campaigns can be most instrumental in revealing the doctor favorably in the "public eye".

SUPPLEMENTARY PROJECTS

The last and final section is devoted to a discussion of many "supplementary projects" to the basic eight I have just explained. This is a vital section and if your society has already made a going enterprise of the "basic eight" plan, this portion of the manual can stimulate and reinforce your activities with its many ideas, and suggestions for extending these services to the community.

To supplement your emergency call system you may wish to tie in such educational campaigns as: The need for selecting a family physician before an emergency arises—or publicizing its very existence through welcome wagon pamphlets. To strengthen your mediation committee project you may wish to conduct an education campaign, both to the profession and the public, on medical audits, tissue committees, medical ethics, and others.

To improve your press relations program we suggest such subjects as health columns, feature articles, medical supplements, and medical society advertising—for your consideration.

Speakers bureaus can be augmented by health forums, health fairs and exhibits, literature distribution, and radio and television programs.

To make your indoctrination program more effective, you may wish to develop a lecture series on medical student indoctrination, or to encourage your medical assistants to organize an in-service PR training program. How your woman's auxiliary may fit into your PR plans also is discussed.

There are many supplementary projects discussed which may be incorporated into your programs for providing medical care to all: Indigent care check list, handling heart-throb appeals, promotion of voluntary health insurance, elimination of insurance abuses, discussion of fees, average and usual fees, collection agencies and medical credit bureaus.

In like manner, public service and citizenship projects are expanded upon.

I think we can safely say that the "County Medical Public Relations Manual" is the most comprehensive, the most complete manual of its kind ever to be published.

If placed in the hands of the public relations chairman and really used, it can do wonders to improve our services to the American people.

It can be just as effective as you make it. As PR disciples, if you preach the PR gospel as presented in this manual, I will prophesy a revival within each and every county medical society in the United States.

———o———

X-RAY IRRADIATION OF THE NASOPHARYNX FOR HYPERPLASIA OF LYMPHOID TISSUE *

M. RAGAN GREEN, M. D. †
BRUCE W. EVERIST, M. D. ‡
O. WHARTON BROWN, M. D. ‡
HAROLD H. HARMS, M. D. §
RUSTON

For the past thirty years irradiation of the nasopharynx for hyperplasia of the lymphoid tissue has been reported to be of considerable benefit. During the first twenty of these years, radium and radon applicators were almost exclusively used. During the past ten to fifteen years there has been a tendency for therapists to use external irradiation. Our report deals with this latter method.

Our methodology has evolved from careful consideration of the anatomy of the nasopharynx. The nasopharynx, as the genesis of the respiratory system, has on its ventral walls the two posterior nares. The vomer of the nasal septum is located between them. The floor of the nasopharynx is the upper surface of the soft

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 21, 1954.

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palate. Above and behind, bilaterally, on the lateral wall of the nasopharynx is located the pharyngeal recess or the fossa of Rosenmuller. Inferior and anterior on the lateral walls are found the orifices of the eustachian tubes with their elevated boundaries. There is, normally, lymphatic tissue in the roof and posterior wall of the nasopharynx, and, when tufted to become a distinguishable mass, it is termed an adenoid. At rest, the nasopharynx is open, and there is a clear space present. Lymphoid hyperplasia is the most common pathology causing an obstruction of the nasopharynx. In adults, the openings of the eustachian tubes are approximately 4.3 cm. apart, and the length of the eustachian tubes about 3.5 cm. The size of the tube increases as it reaches the opening into the pharynx. The ostia, in adults, are vertical and slit-like, whereas in children the ostia may be much more rounded. The opening into the nasopharynx is surrounded by a prominent bulge which is composed of cartilage covered by mucous membrane. The tufts of adenoidal tissue lie on the roof and posterior portion of the nasopharynx and may extend down to obstruct the opening of the eustachian tubes. The lateral and posterior walls of the nasopharynx have scattered bands of lymphoid tissue, and under usual circumstances, there is no lymphoid tissue in the eustachian tube, or immediately surrounding its opening. Repeated acute or chronic infections may result in lymphoid hyperplasia with extension into the eustachian tube, and, rarely even into the middle ear. Such a space, devoid of drainage, will inevitably remain infected. By ordinary means it is impossible to determine the presence, or absence, of lymphoid infiltration in the wall of the tube, but it may very well be suspected on clinical grounds. This report, then, deals with external irradiation of this area in an effort to institute adequate drainage. In time, it covers a period of five and one-half years. All of the patients irradiated were seen by at least two of us. In general, our indications for irradiation have been those children who have had repeated upper respiratory infections with repeated, severe and protracted middle ear infections, recurrent or chronic sinusitis and a few children with a more serious sinobronchitis when both upper and lower respiratory tracts were involved. By clinical evaluation it was agreed that small, strategically placed lymphoid masses could best be treated with x-ray therapy alone. In those with larger masses, particularly with excessive central adenoidal tissue, an adenoidectomy was first performed, followed by x-ray therapy in one month to six weeks following surgery in selected cases. We have purposely avoided in this report data relative to the bacteriological agents involved, the associated allergic diatheses, nor do we wish to confuse the issue by our own irregular data on audiometric examinations. Our only concern in this preliminary report is the maintenance of normal drainage of the nasopharynx. Our technique is as follows: 200 KVP, ½ cu. and 1 al filter, 50 cm. distance, 15 MA; this gives a half value layer of 1 mm of copper. Our portals have varied from 5 cm. round to 5 by 8 cm. rectangular, with the vast majority using 5 cm. round. All of these have been given by one of us (M.R.G.) with careful duplication of ports, and the patients have been treated twice weekly, alternating sides, giving each side 2 treatments. The amount given has varied from 75 roentgens in air at each treatment to as much as 250 roentgens in air at each treatment; thus, each side has received from 150 roentgens in air to 500 roentgens in air. The location of the port is shown on Figure 1. The ages treated have varied from 9 months to 12 years with the majority falling in the 2 to 4 year age group. Since there is no pain we have had no difficulty restraining even our youngest patients. No anesthesia is ever required. The rays are so directed that the lymphoid area of the nasopharynx is included in the fields. Abnormally placed areas of lymphoid tissue in the eustachian tubes are equally affected. By adequately centering the ports

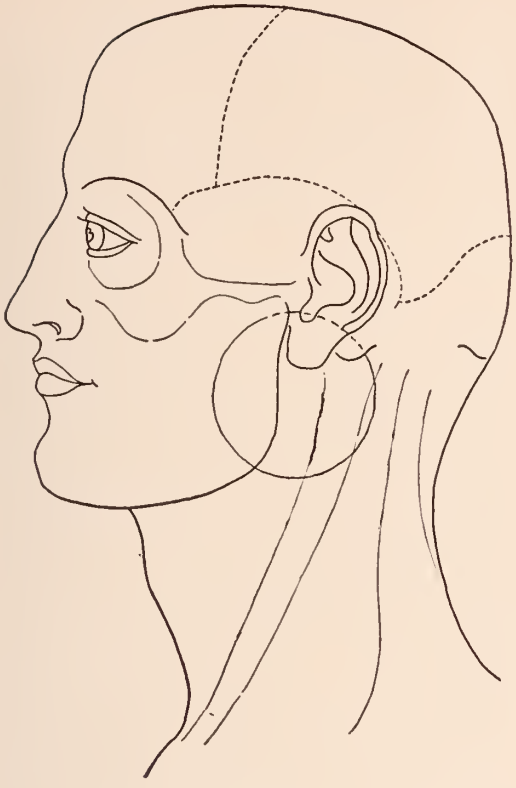


Figure 1

we feel that standardization of treatment is certain. Critics of external irradiation have suggested that the procedure is too dangerous for a benign condition. We would take issue with both the supposition that the procedure, in good hands, is dangerous, and that the condition is benign. Certainly the condition is not wholly benign when hearing loss, facial distortion from mouth breathing and chronic infection that affects growth and development obtain. The proponents of irradiation have all suggested caution against skin damage and permanent injury to ossification centers. With the dosage schedule that we have used there is no skin injury, no soft tissue damage and certainly the amount of irradiation that is delivered to the midline is much less than would be necessary to cause any injury to epiphyseal centers. One critic has stated that external irradiation frequently causes mouth dryness; this we have not seen. Such symptoms would come from using too large a portal, allowing the salivary glands to be treated. This is unnecessary with proper irradiation to the eustachian tubes and nasopharynx. The only disadvantage to roentgen therapy that we have noted has been an occasional, temporary edema of lymphoid tissue which may block the eustachian tubes with short-lived discomfort in the middle ear.

Since re-institution of normal drainage was the prime aim in the treatment of these children, we felt that subjective data would be adequate to express our results, and that objective data would be adequate to express our confidence in the safety of this procedure. Each patient was examined by one of us six weeks after the last treatment and varying intervals thereafter. There have been no cases in which we have felt there was any serious untoward reaction.

For our subjective data a questionnaire was sent to the parents of the 360 children treated. We have compiled the data on the first 165 reports received. Upon initial evaluation this method of acquiring data for the purpose of determining the efficacy of any therapeutic procedure would seem totally inadequate. However, the completely one-sided response seemed to compensate for the inherent deficiencies in parental observation. Thus, the data is shown in Table 1. The first question is, of course, difficult for parents to determine. Even so, we have found close correlation with their observations and the audiometric studies that we have done. Of the 97 answering this question, 55 had been aware of some hearing loss, and, of these, 42 reported improvement following x-ray therapy. The third question was a request for objective parental observation for obvious nasopharyngeal obstruction. These signs or symptoms had been noted by 105 parents. Of these, 77 stated that the symptoms had either disappeared or improved following x-ray therapy. The fifth question merely asked the parents to compare the frequency of upper respiratory infections the year prior to and the year following x-ray therapy. There were 153 parents who answered this question, and 139, or 90 per cent, felt that the

TABLE 1

	Yes	No
1. Had you detected any hearing difficulty prior to the x-ray therapy?	55	108
2. If so, in your opinion has his hearing improved following x-ray therapy?	42	18
3. Prior to x-ray therapy had you noticed that your child was mouth breathing or snoring?	105	54
4. If so, have these symptoms decreased following x-ray therapy?	77	31
5. Has the frequency of infections in the nose, throat, and ears decreased following x-ray therapy (compare the year before and the year following x-ray therapy)?	139	14
6. Have your child's tonsils and adenoids subsequently been removed?	28	98

frequency of upper respiratory infections was reduced. Recognizing that this means of evaluating a particular procedure in reducing the frequency of respiratory infections has many pitfalls, one could hardly deny this overwhelming response on the part of parents as having some real meaning.

In summary, then, we have briefly reported 165 of our 360 cases of external irradiation used solely to improve drainage through the eustachian tubes and nasopharynx. We have found no serious, untoward reactions in any of our patients, during the five and one-half years that some of them have been followed. Subjective data has been reported relative to its efficacy.

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TUMORS OF THE LARYNX *

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NEW ORLEANS

The human larynx is not the most important organ of our body, nor is it vital to our existence; yet it plays an important part, not only in facilitating respiration, but also, in social contacts in our daily lives.

The average person gives little thought to the function of the larynx unless his attention is directed to it by some malfunction. A good pleasing voice is an asset that not only helps win friends but also may be of considerable economic value. The larynx is heir to various human ills, as are other organs of the body. One of the most important of these is tumors. Both benign and malignant tumors are found growing not only on the vocal cords but also in other localities of this structure. Growths on the vocal cords make their presence known early in their development by producing changes in vocal function which we describe as hoarseness. The tumor need not be large to produce a mild degree of hoarseness. As it increases in size, however, the hoarseness becomes, as a rule, more pronounced, and large growths may also produce dyspnea.

BENIGN TUMORS

Although there are numerous types of benign tumors, for practical purposes only those most frequently encountered will be discussed. Probably the two commonest tumors seen on the vocal cords are polyps and single papillomas. *Polyps* may be as small as the head of a pin or large enough to obstruct the laryngeal aperture. The small ones are smooth and rounded and the large ones may become pedunculated and oblong. Frequently, the powerful adductor action of the vocal cords will produce sufficient trauma to a polyp to give it a hemorrhagic appearance. The problem presented by polyps of the larynx, as

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in all benign tumors of the vocal cords, is accurate removal of the lesion with as little injury to the vocal cords as possible. A clear normal voice postoperatively is proof of the success of the operation.

Polyps and papillomas look so much alike that they are exceedingly difficult to differentiate by mirror laryngoscopy. Single *papillomas* are always small and are located on either the superior or contact surface of one vocal cord. Unlike polyps, papillomas have a tendency to recur. Repeated recurrence of papillomas in adults should be viewed with suspicion, as they occasionally show a disposition to malignant degeneration.

Multiple papillomas are the most pernicious tumors seen in the larynx of little children. They recur repeatedly in spite of persistent therapy. They usually develop in early life and it is generally believed that they disappear about the age of puberty. During this interval of time it is usually necessary to remove these multiple papillomas repeatedly in order to provide adequate breathing space within the larynx. If the papillomas recur too rapidly, tracheotomy may be advisable so that the larynx may be placed at rest. It is not too unusual to see a patient with multiple papillomas continue to have these growths in adult life. Several years ago we reported a case of multiple papillomas of the larynx which were discovered in a child of 3 years who died at the age of 21 years after having had 103 operations for removal of multiple papillomas from the larynx and tracheobronchial tree. It has been our observation that multiple papillomas of the larynx usually occur in underprivileged children. The etiology is still obscure and treatment remains unsatisfactory.

Nodules usually develop at the junction of the anterior and middle thirds of the vocal cords always as a result of vocal abuse. They are frequently found in little children who shout, yell, and scream excessively. Unless they become extremely large, it is our opinion that surgical removal should be delayed until the child has reached the age of reason and cooperation. Earlier removal will probably be followed by recurrence, for as soon as the operation is concluded the child will resume shouting, yelling and screaming—the same conditions which were originally responsible for the development of the nodules.

Vocal nodules in adults may well be considered as an occupational hazard, for they are seen most frequently in individuals whose occupations demand much use of the voice, such as preachers, teachers, and singers. In the early stages vocal rest will prove beneficial, but if the nodule has existed for a long time, surgical removal must be advised.

Contact ulcers, which always occur at the vocal process followed by formation of granulating tissue, are at times exceedingly difficult to treat. Simple removal of the granulation tissue as a rule is not sufficient to effect a cure, for too often, the granulating tissue rapidly recurs. Vocal rest and speech therapy play an important part in the successful treatment of these ulcers. I have never seen a contact ulcer with granulations that has not eventually cleared up, although in some cases this may take a long time.

Since the advent of intratracheal anesthesia, a new type of benign tumor is occasionally encountered. This is a granuloma, always located on the vocal process either unilaterally or bilaterally. Invariably, the hoarseness dates back to a recent operation, and careful inquiry will reveal that intratracheal anesthesia was used. We can only theorize on the cause of the occurrence of these granulomas, since they are seen so infrequently. The mucosa covering the vocal process of the arytenoids is exceedingly thin, tense and delicate. Excessive pressure exerted by an intratracheal tube for too long a period of time may certainly produce trauma followed by irritation and granulations. Vigorous adduction of the vocal cords during anesthesia could conceivably traumatize the vocal processes. Another thought occurs. Could an occasional patient be allergic to rubber tubes? Sometimes a surgeon will find that he is allergic to rubber gloves.

These nonspecific granulomas following intratracheal anesthesia, unlike granulomas occurring with contact ulcers, usually respond favorably to surgical removal.

Polypoid degeneration of the vocal cords is the end result of long standing laryngitis. The contact surfaces of the vocal cords undergo polypoid degeneration, which enlarges with time. One or both cords may be involved and the polyposis begins at the anterior commissure and ends abruptly at the vocal process. These polypoid flaps bounce in and out with respiration and produce a raspy, hoarse voice. Frequently, the edge of the vocal cord can be seen through the translucent polypoid tissue and serves as a guide in excision of this tissue. In excision of bilateral polyposis of the vocal cords the virginity of the anterior commissure must be respected or anterior synechia of the cords will develop.

MALIGNANT TUMORS

By far the most serious tumors occurring on the vocal cords are the malignant ones. Statisticians inform us that 4 per cent of all malignant tumors occur in the larynx, the majority of which develop on the vocal cords. If the tumor is excised in the early stages, the prognosis is good. Although it is regrettable that the larynx, or any other part of the body, is susceptible to malignant neoplasms, man is indeed fortunate, if predestined to have cancer, when it develops on one vocal cord. Simultaneously with its occurrence on one cord, hoarseness develops and persists. Early recognition of this warning signal and proper treatment offer a great chance of obtaining a complete cure.

Early cancer of the vocal cord does not follow any specific pattern. The growth may assume various forms, and any unusual appearance of one vocal cord must be viewed with carcinoma in mind. Eighty-five per cent of carcinomas of the larynx will occur on one vocal cord. In the early stages these growths are unilateral, and only by extension and invasion do they become bilateral. These early lesions grow slowly and produce hoarseness simultaneously with their appearance. At first, the hoarseness is mild but persistent, but as the growth increases in size, it becomes proportionately worse. It is regrettable that this type of lesion produces no pain at any time in the early stages. For this reason, patients usually postpone consulting a competent physician. Pain is associated by the laity with cancer, and all too frequently examination is delayed because of its absence. If pain were present, we would undoubtedly see these patients much earlier when the chances of success are greater.

These lesions have various appearances. They may be sessile with definite limitation of the growth by the presence of normal tissue on all sides or, rarely, they may appear as a uniform enlargement of the entire vocal cord with accompanying hyperemia of the cord. Incidentally, any unusual type of lesion occurring on one vocal cord should be considered as carcinoma until proved otherwise. A unilateral granular appearing vocal cord should be regarded suspiciously. The last two cases of this type that came under our observation proved to be nonspecific granulomas. Carcinoma limited to one vocal cord is usually the squamous cell type, which is relatively slow growing, and because of the paucity of the lymphatic supply in this area metastasis does not occur until late. A small growth, limited to a portion of one vocal cord, no larger than the head of a match, can be successfully extirpated by the oral route with the aid of the suspension laryngoscope. Unfortunately, only 6 per cent of all carcinomas of the larynx are seen early enough to warrant this type of procedure. These surface lesions of low grade malignancy, when completely extirpated, yield cures in 94 per cent of cases. This is a higher rate of curability than it is possible to obtain in cancer involving any other internal organ of the body. If a greater portion of a vocal cord is invaded with a malignant growth and the cord still shows normal function, it is possible to extirpate the lesion and still save the larynx. The laryngofissure operation is intended for removal of one vocal cord.

It is an ingenious operative procedure in which, through an external incision, the thyroid cartilage is split in the median line and the two wings of the cartilage are spread open permitting a direct view of its interior. It is comparatively easy to extirpate the growth in properly selected cases. Such cases offer approximately 85 per cent cures with some distortion of voice.

If the malignant growth is more extensive and one vocal cord is fixed, indicating posterior infiltration, or if there is subglottic extension, conservative measures will not give the desired results. Complete removal of the entire larynx offers hope of permanent cure, provided metastasis has not occurred. Laryngectomy is a radical procedure, but it is the only means of combating a relentless foe with any degree of success.

SUMMARY

Both benign and malignant tumors are encountered in the larynx. Probably the two commonest benign ones are polyps and single papillomas. These lesions look so much alike that they are difficult to differentiate by mirror laryngoscopy. Multiple papillomas are the most pernicious tumors seen in the larynx of little children. Despite persistent removal, they continue to recur. Vocal nodules are always the result of vocal abuse. Vocal rest may be all that is necessary in the early stages but long standing nodules require surgical removal. Contact ulcers occur on the vocal process and are accompanied by granulating tissue. They eventually clear up with vocal rest and speech therapy. Granulomas sometimes develop on the vocal process in patients who have had intratracheal anesthesia. They usually respond favorably to surgical removal. Polyposis of the vocal cords is the end result of chronic laryngitis. Surgical excision is indicated.

The most serious tumors of the vocal cords are the malignant ones. Complete cure can be obtained in the early ones by excision by the oral route with the aid of the suspension laryngoscope. Unfortunately, only 6 per cent of cases are seen early enough to warrant this type of procedure. If cancer involves a greater portion of a vocal cord but the cord still shows normal function, the laryngofissure operation makes it possible to extirpate the lesion and still save the larynx. For more extensive growths with fixation of one vocal cord or subglottic extension laryngectomy offers hope of permanent cure, provided metastasis has not occurred.

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THE ROLE OF STEROIDS IN ALLERGY *

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The role of any new drug in the therapeutic armamentarium of the physician is often a difficult one to assess. As valuable and as necessary as the results of animal experimentation undoubtedly are, the final judgment must inevitably await the analysis of data gathered after extensive clinical application. Often the unbounded enthusiasm which attends the discovery of a potential panacea is eventually replaced by the cautious acceptance of the new medicament, with definite indications and contraindications. This, I feel, has been the story of the steroids.

Most of us have at times been guilty of using ACTH or cortisone when the indications were somewhat hazy or perhaps before an adequate search for contraindications was completed. Then clinical success occurred with sufficient frequency to establish these bad habits and to instill within us a false sense of security. I should like to review some of the information which has been obtained regarding the role of the steroids in allergy and perhaps, by this, to maintain an objective position which is essential to their proper use.

I have already intimated the importance of the study of immunologic mechanisms observed in laboratory animals and the effect of the steroids on these mechanisms. A grasp of certain of these fundamentals

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is a helpful stepping-stone to clinical application.

It has been shown by various investigators that the steroids are unable to prevent anaphylaxis in the guinea pig. Malkiel [11] sensitized these animals to horse serum. They had been treated with ACTH or cortisone before and after sensitization. However, when these guinea pigs were submitted to the challenging dose of horse serum, fatal anaphylaxis occurred. The results with passive sensitization were similar and this inadequacy could not readily be attributed to the dosage employed. The results were conclusive. ACTH and cortisone did not prevent the formation of antibodies in the guinea pig, nor did they influence the union of antibody with antigen and subsequent anaphylaxis. Also, these hormones had no effect on the fixation of the antibody to the shock organ, which was necessary for the production of anaphylaxis in passively sensitized animals.

The role of histamine in allergy has been poorly defined. At times it has been incriminated as the effector substance responsible for anaphylaxis. Therefore, its relation to the steroids becomes one of importance.

It is known that the injection of histamine can produce shock readily in guinea pigs. Landau and his associates [9] found that repeated large doses of ACTH and cortisone were ineffective in preventing this.

The naturally sensitive, asthmatic man is known to be peculiarly intolerant to histamine. Injections of this drug in such amounts as are used ordinarily to test the gastric secretions have precipitated an acute asthmatic paroxysm in such patients. Curry and his workers [4] discovered that the administration of varying amounts of ACTH offered no protection to these individuals. However Segal [7] and his associates successfully protected their patients by pretreatment with adrenalin, aminophyllin and antihistamines. Apparently ACTH and cortisones did not exert an antihistaminic effect.

The reagin has often been considered the special antibody of allergy. It is responsible for the wheal and flare which is characteristic of the positive skin test in sensitive individuals. These are also present as circulating antibodies in the blood stream and are responsible for the passive transfer of sensitivity from the atopic to the non-atopic individual. It has generally been agreed that ACTH and cortisone have no effect on skin reactivity in the atopic patient, nor do they have an effect on circulating reagins as shown by the persistence of positive passive transfer tests.

The Arthus phenomenon is closely associated with circulating precipitating antibodies and the investigation of its alteration by ACTH and cortisone has been enlightening.

Bjorneboe, Fischel and Stoerk [3] used intravenous polyvalent Pneumococcus antigen to immunize rabbits and subsequently noted the effect of cortisone and ACTH on specific antibody nitrogen and also on the histopathology of the spleen. They discovered that when the steroids were administered before and after sensitization there was an absolute reduction in circulating antibody. Prolonged immunization in the untreated animals resulted in gross splenic enlargement and a dense infiltration of plasma cells. In the animals treated with ACTH and cortisone there was no splenic enlargement and no plasma cell infiltration.

Germuth [6] and his associates did their work on the Arthus phenomenon by injecting rabbits intradermally with egg albumin daily for a period of eighteen days. Three separate groups of animals were used; one of these served as a control. Of the other two groups, one was treated with ACTH and one with cortisone. The control animals all developed a large Arthus reaction at the injection site by the thirteenth day and the level of antibody nitrogen in the serum reached 200 gamma per cubic centimeter by the eighteenth day. The reaction was definitely inhibited in the rabbits receiving ACTH with anti-

body levels averaging about 50 per cent of that of the controls. The skin reactions in the cortisone treated group were only slight and the levels of antibody nitrogen quite low. It was interesting that the inhibitory effect of cortisone was temporary and the reaction became increasingly more severe as the medication was gradually discontinued.

It is interesting to note at this point that, while ACTH and cortisone had no effect on the circulating antibodies producing passive sensitization in the guinea pig, they definitely lowered the level of circulating antibody responsible for the Arthus phenomenon in the rabbit.

Several types of antibodies have been described. The complete precipitating and agglutinating antibody has been thought to be responsible for the Arthus reaction. The nonprecipitating antibody has been thought to be responsible for the positive wheal and flare skin reaction and the passive transfer of anaphylaxis in the guinea pig. This would suggest the possibility that ACTH and cortisone might have different effects on different antibodies. The blocking antibody inhibits precipitation or agglutination by the complete antibody.

One important action of these hormones has not been mentioned, and that is the ability to suppress the inflammatory response. Apparently this is a nonspecific effect and is not mediated by an antigen-antibody mechanism. The definite quantitation of how much benefit in disease is due to specific and how much to nonspecific effects has not been achieved.

The first clinical consideration is the use of the steroids in bronchial asthma. Most authors are in agreement as to which patients should be selected for this type of therapy. Certainly patients who are initially seen in status asthmaticus and who fail to respond to the usual emergency treatment of adrenalin, ephedrine, aminophyllin, iodides, etc. are candidates for this specialized treatment. Also those patients who have, in the past, responded to hyposensitization and symptomatic therapy and who suddenly develop intractable asthma should be considered. Finally, that group of patients in whom the search for a specific antigen has not been successful and who, because of their disease, have been unable to maintain a useful position in society, may require hormone treatment. Their rehabilitation may rest on a satisfactory response to ACTH or cortisone.

The contraindications to the use of these hormones have become quite familiar to us as the sphere of their usefulness has broadened. These include the presence of active tuberculosis, an active peptic ulcer, a history of thromboembolic phenomena, psychiatric disorders, diabetes and active infection. Also the presence of hypertension or congestive failure may serve as deterrants. However, most of these contraindications are relative and not absolute. The final decision must inevitably be the urgency of the situation.

The exact dosage employed has differed slightly among clinicians, though most seem to favor large initial amounts. Irwin et al,[8] followed a schedule of 75 milligrams of cortisone every six hours for twenty-four hours; then 50 milligrams every six hours until complete suppression of symptoms occurred. Evans and Rackemann[5] advocated 100 to 300 milligrams of cortisone daily until there was definite improvement. Bickerman and Barach[2] used 300 milligrams of cortisone daily for the first two days, 200 milligrams daily for three additional days, and 100 milligrams daily from the sixth to the tenth day. Their particular results will be mentioned in more detail below.

The dosage of ACTH also has varied within fairly narrow boundaries. Bickerman and Barach[2] used intermittent courses, each consisting of 25 units of ACTH intramuscularly every six hours for four to five days. They also employed Acthar Gel, using 60 units once daily for five or six days and with 50 units of ACTH added to the first two injections. Evans and Rackemann used 80 to 160 units of ACTH daily until improvement

occurred.

Experience with hydrocortisone has shown that the daily dosage averaged 50 per cent to 60 per cent of that of cortisone.

Maintenance therapy is most often conducted with cortisone or hydrocortisone because of the obvious advantages of an oral preparation over one which must be administered parenterally. It is not wise to set arbitrarily a specific maintenance level as this will necessarily vary with individual patients. One method of seeking this level is to decrease the daily dosage of cortisone by 12.5 milligrams every week. When the medication has been reduced to the point where there is a return of symptoms, the final maintenance dosage should be 12.5 to 25 milligrams above the one the patient was taking when symptoms returned. This, too, may vary and certainly during periods of stress, such as an acute infectious episode, an increase may be necessary.

The findings of Bickerman and Barach were particularly interesting and afford us an opportunity to compare the relative merits of ACTH, cortisone, and hydrocortisone. They studied 107 patients suffering from chronic intractible asthma and 56 with severe pulmonary emphysema. The dosage schedules for ACTH and cortisone were noted above. Hydrocortisone was given in amounts of 50 milligrams every six hours for the first two days, then 40 milligrams every six hours for the next two days, followed by 100 milligrams daily in divided doses for six days.

The incidence of complete remissions in 130 courses of ACTH was 43 per cent with a partial remission in 39 per cent and no improvement in 18 per cent. The results were invariably better in those with bronchial asthma than in the emphysema group. Twenty-six per cent of the latter experienced a complete remission as against 49 per cent of the asthmatics. The duration of the remissions averaged fourteen to sixteen days. Adverse reactions were experienced in 15 per cent of the 130 courses.

One hundred twenty-three courses of cortisone were given and again the incidence of complete remissions was higher in the asthmatics—68 per cent as against 39 per cent for the patients with emphysema. The incidence of side effects in this group was 29 per cent.

Fifty courses of hydrocortisone were administered and the therapeutic effects were approximately the same as with ACTH and cortisone. The duration of remissions in all three were about equal. However, the toxicity was less in the third group with adverse effects in only 8 per cent. This may in part have been due to the smaller dosage of hydrocortisone necessary to achieve the desired effect.

Seventy-two patients of the entire series received two or more courses of therapy. The incidence of complete remissions fell sharply in those receiving ACTH and cortisone. However, there was no significant change in the response of those given subsequent doses of hydrocortisone.

Irwin et al [8] recently summarized their data on 23 intractable asthmatics who have been on cortisone maintenance therapy for varying periods of time, 6 of the group having started in 1951. The maintenance dosage has averaged between 75 and 100 milligrams of cortisone daily. All of these patients have been maintained symptom free. All of them have developed one or more of the manifestations of hypercorticism.

Arbesman and Richard [1] have reported on 63 asthmatics who have been followed from one week to almost four years. Sixty-five per cent of the 63 patients had very satisfactory improvement with cortisone. Twenty-three of these 63 received hydrocortisone at different times and 65 per cent were benefitted. Four of these 23 had better results from cortisone, while 7 preferred hydrocortisone. Twelve obtained equal relief from each. The maintenance dosage of cortisone was between 50 and 75 milligrams, while that of hydrocortisone was usually between 40 and 60 milligrams. The percentage of side effects

was again higher in the cortisone group—32 per cent as against 21.4 per cent.

Lowell [10] and his associates followed 19 asthmatics for a year or more on maintenance cortisone therapy. All improved with an increase in vital capacity and expiratory rate. However, 2 of these patients later developed increasing asthma and were considered failures. It was interesting to note that the functional improvement was maximal after ten to fourteen days of treatment in most instances. Their daily maintenance dosage varied from 50 to 150 milligrams.

The complications of ACTH and cortisone therapy are too numerous and diversified to permit a detailed discussion. Most of them may be included under the heading of hypercorticism and are those with which we are most familiar. The reactivation of tuberculosis and peptic ulcers and the adverse effect on infection should be again mentioned. Not as frequent, but no less important, is the occasional anaphylactic reaction to ACTH, particularly when this is given intravenously. Osteoporosis of the spine with vertebral collapse has been reported and, though infrequent, is no less distressing when it occurs.

In summary, certain experimental work with ACTH and cortisone has been reviewed. The indications, contraindications, and possible complications have been mentioned. Clinically these hormones have been shown to exert a definite beneficial effect on a large percentage of patients in an acute attack of asthma and also on those receiving prolonged maintenance therapy. Certainly the steroids have a definite place in the management of allergic diseases. As our knowledge of the adrenal cortical hormones continues to expand, we should have an optimistic view of their future in allergy—albeit a guarded optimism.

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EXPERIENCES IN THE PSYCHIATRIC TREATMENT OF ULCERATIVE COLITIS *

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Ulcerative colitis is a disease of unknown etiology, supposedly an infectious process of the colon with ulceration, diarrhea, bleeding, and wasting. The many medications and varied treatments used in the past and present are evidence also of the inadequate status of therapy of this dread condition.

Julian Ruffin, of Duke University [1] has divided ulcerative colitis into three groups according to the severity of the symptoms: mild, moderately severe to severe, and fulminating. His criteria for deciding the degree of severity were determined by the number of stools per day, presence of constitutional symptoms and radiological and

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proctoscopic findings. In his series of 100 cases recently analyzed 33 were mild, 62 moderately severe to severe, and 5 fulminating.

The literature is replete with case reports of the disease, and most of the workers in the field have recognized the importance of psychologic factors in the genesis and course of the illness. Some have regarded the psychological factors as consequences of the organic process. Even where credence is given to the psychic factors, there is confusion as to the proper management of these factors.

George Engel,[2] however, has thoroughly discussed the psychological aspects of the management of the patient and has emphasized the child-parent relationship: that is, the unusual and unnatural dependence of the patient upon the parent, usually the mother. The mothers of these patients are often emotionally sick people, often close to psychosis or actually psychotic, and cannot allow the child to grow up and become independent. The child learns only one technic of adjustment, a symbiotic one with the sick mother. The common denominator in the onset or exacerbation of ulcerative colitis patient is often any situation which threatens a disruption of the relationship with the mother or any other person with whom the patient has developed a similar relationship. This threat may be death, illness, or departure of the mother or mother-figure, or growing away attempts of the patient such as adolescence, completion of school, marriage or pregnancy.

Lindemann [3] found bereavement due to death or rejection and disillusionment with a key figure as the precipitating psychological experience in 75 of 87 patients with ulcerative colitis.

Psychotherapy, however, is difficult in the face of the acutely disabling illness. Classical psychoanalytic technics are usually not indicated: the patient is always too ill. Supportive types of psychotherapy have been reported as having been of some benefit. Certainly, whatever psychiatric treatment is used must be done in conjunction with the medical management of the illness.

I became interested in the problem of handling these patients when I was asked to see several who had, in addition to their ulcerative colitis symptoms, clear cut suicidal depressive symptoms. These, of course, fit in with the pattern of response to mourning or bereavement and an attempt to recapture the actual or fancied lost person. I hesitantly treated several of them with a course of electric shock therapy, as one would treat any patient with such a severe depression, and have now handled 6 cases jointly with an internist and surgeon.

Their ages range from 22 to 56 years. There were 5 females and 1 male. Five were classified as severe and one fulminating. In all cases the element or reaction to loss of a loved one was demonstrable. The first case was that of a 45 year old, married white female housewife who for several months had 10 to 20 bloody stools daily, with toxicity, weight loss, and malnutrition. In addition, she was intensely depressed, was anorexic and slept little. She received a course of 8 electric shock treatments with cessation of the diarrhea after the second treatment, followed by constipation. The depression lifted gradually, and the end result was a severely hypochondriacal person without depression or ulcerative colitis. The response of 4 of the others was similar and with a better final result. In each of these the diarrhea and depression stopped quickly. The sixth patient, a 22 year old, shy, thin, asthenic schizoid girl with an acute onset of fulminating ulcerative colitis after marriage was impossible to manage by this technic because of the uncooperative family. Her mother, who was openly psychotic and had been treated 3 times in a state hospital, allowed us to give the patient only 1 electric shock treatment, and then refused any more. No benefit was seen from this one treatment, and the patient subsequently had a total colectomy.

The psychic response of these patients

to electric shock therapy was most interesting. All reacted with much more than the usual memory loss; most had a total amnesia for the hospitalization. All, when originally seen, were hypochondriacal, clinging, dependent people. After the first treatment they reacted with extreme suspicion and distrust and directed various paranoid accusations against the doctor who they thought had poisoned them, was taking advantage of them while they were unconscious, stealing from them, and rendering them incapable of ever making money again. All of these symptoms, in this group of patients, subsided over a period of weeks following completion of therapy.

It seemed as if a temporary paranoid psychosis had taken the place of the symptoms of ulcerative colitis. This course is certainly not seen in the ordinary depressions treated by electric shock therapy.

Five of these six patients have been followed over a period of eighteen months to two years and none have relapsed. The one who had a colectomy is functioning as always before; weak, asthenic, shy, schizoid and hypochondriacal.

CONCLUSIONS

These results lead me to believe that possibly electric shock therapy has a place in the management of some cases of ulcerative colitis in conjunction with medical, surgical and psychotherapeutic care. Perhaps, in acute cases, electric shock therapy may shorten the course of the illness and may even be of life-saving value. Definite conclusions cannot be drawn from such a small group, but these cases indicate that further investigation is warranted and may add to our scanty armamentarium against this debilitating process.

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DISCUSSION

Dr. Kenneth A. Ritter (New Orleans) I find it difficult to discuss something about which I know so little. But this is the first time anyone has tried to treat ulcerative colitis with electroconvulsive therapy so I am sure that my remarks, for the time being, anyhow, will remain incontestable.

That stressful life situations can produce inflammation and ulceration of the upper G. I. tract there is little doubt and there is considerable evidence in medical literature to substantiate this, from the latter 1800's to the present. The classical case of Alexis St. Martin and William Beaumont is firmly fixed in our minds. There is also substantial evidence that the *lower* bowel can be affected by highly charged emotional states. There are not many physicians who would dispute the fact that diarrheas among medical students not uncommonly signal an impending examination.

So, in general, there is wide acceptance that emotions can influence function of the G. I. tract. When we try to go beyond this, however, to discover a constellation of psychological forces peculiar to all cases of a syndrome like ulcerative colitis, we encounter a lot of trouble for it always seems to be easier to find mental differences among the group than mental similarities. And to sift down these traits into a common denominator is no simple task.

Quite recently, as Dr. Head has said, investigation showed us that ulcerative colitis might well be a depressive equivalent, i. e., might serve as a symptom of a morbid depression. The common denominator is thought to be the real or fancied loss of a person on whom the patient relies greatly. I have seen one man recently whose colitis started immediately after the death of an older brother, from cancer, and who was very concerned that he too might have cancer—a not infrequent symptom in depressions.

There was, therefore, a sound basis for trying E.C.T., in ulcerative colitis, since we already knew that E.C.T., was the treatment of choice in pathological depression.

Dr. Head's work here seems to bear out our suppositions excepting the release of the severe paranoid elements following treatment. Paranoid elements are not uncommon in depressed people but not ordinarily to this extent and this may be why these people do not get the "garden variety" of depression and get colitis instead.

My own experience with E.C.T., in treating ulcerative colitis is limited to one case, that of a young housewife who also had epilepsy. She was almost moribund when I first saw her and there was no possibility of anything remotely resembling psychotherapy. After the first treatment, her fever and pulse rate showed a marked drop to normal levels and remained there throughout her course. But she continued to have free bleeding and because of this and multiple polypi, an iliostomy had to be done. The marked decrease in toxicity no one is able to explain.

I think that Dr. Head's work is provocative and stimulating and may well add to our knowledge of the psychodynamics and therapy of this baffling disorder.

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DISEASES OF THE FEMALE URETHRA AND BLADDER*

C. M. PASQUIER, JR., M. D.
E. C. ST. MARTIN, M. D.
J. H. CAMPBELL, M. D.
SHREVEPORT

In this presentation, some of the more common disorders of the lower urinary tract in the female will be considered. This subject was chosen for several reasons. In the first place, of the urological diseases of females encountered in general practice, the primary pathology in the great majority of cases will prove to be in this portion of the urinary tract. Secondly, the outstanding symptoms in most of these diseases are those of bladder irritability and attention is thus focused on this organ leading to the common practice of making a hasty diagnosis of "cystitis". We caution against this practice and stress the importance of complete examination of the urinary tract. And finally, we wish to emphasize that some one of the conditions frequently exists in the patient being considered for surgical repair of cystocele and/or urethrocele and may actually be the primary cause of the urinary symptoms and stress incontinence. Recognition of this fact and appropriate treatment of the associated urological disease may eliminate the necessity of doing a repair in some cases and in others may prevent the persistence of urinary symptoms following an otherwise entirely satisfactory surgical procedure.

A complete list of the diseases of the female urethra and bladder is quite extensive and time does not permit even a brief discussion of all these conditions. The outline followed herein is by no means complete; however, it is offered as representing the more important and more common diseases of the female urethra and bladder.

URETHRA

Congenital Diseases:

1. *Stenosis of external meatus:* This is a common finding and is usually congenital in origin. However, occasionally it is seen in association with senile vaginitis, probably resulting from this condition.

The chief importance of this disease lies in the fact that it may be a factor in persistent or recurrent cystitis and urethritis. In such cases, correction of the stenosis often results in disappearance of the cystitis and urethritis which previously had resisted all therapy.

Diagnosis is made by calibration of the meatus with urethral sounds. Normally, the urethral meatus in the female should accommodate a No. 26 F. sound easily. If a sound of this size is grasped tightly by the meatus, or dilatation to a larger caliber is impossible, meatotomy should be performed.

2. *Diverticulum:* In most instances diverticulum of the female urethra is acquired rather than congenital. For this reason, it will be considered later with acquired diseases of the urethra.

Acquired Diseases:

1. *Caruncle.* These are polypoid lesions, usually attached to the mucous membrane of the posterior aspect of the urethral meatus. Histologically, these benign tumors may contain many thin walled blood vessels. This may be so marked that the lesion has the appearance of a hemangioma. They may be symptomless, or on the other hand, may be exquisitely sensitive.

Treatment is excision, either by sharp dissection or by means of the electrosurgical unit. Regardless of the method used, it is important to preserve sufficient excised tissue for miscroscopic examination, to completely destroy the mucous membrane of the base of the tumor, and to perform the excision in such a manner as to avoid subsequent stricture of the external meatus.

2. *Prolapse.* This is an eversion of the urethral mucosa through the meatus. It

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occurs more often in childhood or advanced old age. The chief predisposing cause is generally considered to be a weakness of the urethral wall from various causes. Symptoms of frequency and burning may occur. Treatment is excision or cruciate fulguration.

3. *Urethritis.* Acute urethritis in women is usually due to gonorrhea and will not be considered in this presentation. Chronic urethritis in women is extremely common. This condition probably constitutes at least 50 per cent of the cases seen in office urological practice. The symptomatology may be quite diversified. The vast majority of patients evidence some degree of vesical irritability, i.e., frequency, dysuria, urgency, tenesmus and nocturia. Hematuria is not uncommon. Such symptoms frequently tend to follow a pattern of remissions and exacerbations. Pain is a common complaint and may be localized in the suprapubic region, back, or lower extremities. At times, pain simulating ureteral colic may be complained of. Fever, unless a complicating pyelonephritis exists, is unusual. Nervousness, and edema of the feet, hands and face are common complaints in this condition. The reason for these latter symptoms is not clear. Urinalysis often is negative. However, urine culture is usually positive, revealing some member of the coliform group of bacteria as a rule.

On vaginal examination, some thickening, induration, and tenderness along the course of the urethra is noted. Endoscopic examination of the urethra, particularly in the region of the bladder neck, discloses granulation tissue, cysts, villi, and polyps. Varying degrees of cystitis often coexist, particularly during acute exacerbations of symptoms.

Recently, evidence has been offered to indicate that some of these cases are due to an allergy of the urinary tract.

The most important therapeutic measure is adequate urethral dilatation. This is accomplished by weekly treatment, progressively increasing the size of the sound used each time until a No. 30 F. sound can be passed easily. A urethral meatotomy may be required before this can be accomplished. Subsequently, the interval between dilatations is gradually prolonged and by trial and error the most satisfactory period between dilatations is established for each individual. Most individuals who have had this condition will remain comfortable and free of recurrences if they are dilated once every four months. Some type of silver preparation (argyrol, protargol, dilute silver nitrate) is instilled into the urethra following dilatation. A certain small percentage of patients do not respond satisfactorily to the above outlined procedure and may require fulguration of the inflammatory tissue in the posterior urethra.

Any coexisting gynecological condition, notably chronic inflammatory diseases of the cervix, should be treated. A direct causal relationship between chronic cervicitis and chronic urethritis probably exists since a communication between the lymphatics of the cervix and urethra has been established.

4. *Stricture.* The most common stricture in the female urethra is that which occurs at the external meatus. This condition was considered above in the discussion of congenital diseases of the female urethra. The small caliber, annular stricture, such as we see in the male resulting from gonorrhea, is uncommon in the female. When it does occur it is more often the result of lymphopathia venereum or granuloma inguinale. A diffuse narrowing of the greater portion of the urethra is frequently encountered in urological practice, and is almost invariably seen in association with chronic urethritis. Symptomatology and treatment are the same as in urethritis.

5. *Diverticulum:* Most of these are acquired rather than congenital, although the possibility of the latter must be admitted. They may develop from existing paraurethral glands by occlusion of the duct or they may form as the result of trauma, as during labor, or from infection of the paraurethral glands.

The symptomatology is most frequently that of recurrent urethritis and cystitis.

At times these diverticula become the site of abscess formation. When this occurs, vesical irritability is usually severe, accompanied by pain and difficulty in voiding, often culminating in acute urinary retention. Constitutional symptoms, chills, fever, general malaise, usually are also quite prominent in these situations.

On examination, a tender mass can be palpated in the urethrovaginal septum. Digital pressure on this mass will often produce the appearance of cloudy urine or pus at the external urethral meatus. Urethroscopic examination will usually permit visualization of the mouth of the diverticulum on the floor of the urethra. Calculi can occasionally be demonstrated within the diverticulum. It is usually possible to visualize this lesion radiographically following injection of some radio-opaque medium, such as lipiodol, into the urethra.

Treatment: When an abscess is present, digital pressure to empty the diverticulum accompanied by other conservative measures, such as hot sitz baths and antibiotics are indicated until the acute inflammatory process has subsided. Later, diverticulectomy should be performed.

BLADDER

Congenital Diseases:

1. *Bladder neck contracture:* While in most cases this condition is probably congenital in origin, a certain number of patients undoubtedly develop this disorder as a result of chronic, recurring urethritis.

The smptoms usually are identical to those typically seen in urethritis and cystitis, namely, frequency, nocturia, urgency, urgency incontinence and varying degrees of dysuria. Urinary retention, with or without overflow incontinence is rarely seen. However, varying amounts of residual urine are not uncommon. Here it might be stated parenthetically, that we recently have established the practice of routinely checking for residual urine in all females with persistent bladder symptoms or resistant infection and have been impressed with the relative frequency of this finding. When infection of the urine supervenes, recurrent episodes of pyelonephritis develop. This condition should always be considered in any child with some disturbance in the voiding pattern and or recurrent or resistant urinary infection.

The most serious aspect of bladder neck contracture is the progressive damage of the upper urinary tract as a result of the "back pressure effect".

Diagnosis is established by endoscopic examination, demonstrating the annular contracture or "collarette formation" at the bladder neck. Varying degrees of trabeculation of the bladder wall are usually associated and in the more advanced cases cellules and diverticula may be found. These findings are telltale proof of the stress under which the bladder has been functioning. A graphic and more striking portrait of the ultimate consequence of bladder neck contracture is afforded by the cystogram showing reflux of urine into the upper urinary tract. This reflux may not be demonstrated on a film made simply after filling the bladder with contrast medium by the gravity method but may be evident only on a second film made immediately after voiding. The importance of this point has been stressed by the authors in a previous publication.

Treatment: Some of the cases of less severe contracture can probably be managed quite satisfactorily by periodic dilatation of the bladder neck with sounds of large caliber (30-32 F.). However, when it can be demonstrated, as outlined above, that the upper urinary tract is being affected by "back pressure" it would seem that surgical correction of the bladder neck obstruction is indicated. It is our conviction that this is particularly so in children. When surgical treatment is decided upon, resection of the contracted bladder neck can be accomplished either by the transurethral route or retropubic approach. The latter procedure, combined with the Bradford Young revision of the anterior lip of the bladder neck, gives promise of being the most satisfactory method of correction.

Acquired Diseases:

1. *Foreign bodies:* These may be introduced from without by trauma, such as splinters or fragments of bone. Occasionally they are the aftermath of a surgical procedure; a nonabsorbable suture or a gauze sponge, for instance. However, in the great majority of cases foreign bodies in the bladder are self-introduced. The usual history is that some object being used for urethral masturbation is accidentally lost and enters the bladder.

The symptoms produced by the presence of such a foreign body are usually those of cystitis. If the object remains in the bladder for any length of time it frequently becomes incrusted with calcium salts and may serve as the nucleus for the later formation of a bladder calculus. The possibility of a foreign body should be considered in every case of persistent or recurrent cystitis, particularly in female children.

The diagnosis may be established by x-ray examination, provided the object is radio-opaque or has become calcified. Cystoscopy, which should be performed in all cases with symptoms of persistent or recurrent cystitis will demonstrate foreign bodies not evident on x-ray examination.

Treatment is, of course, removal. This may be accomplished cystoscopically if the object in question is of such size and shape as to permit withdrawal through the cystoscope sheath. Otherwise cystotomy will be necessary.

2. *Calculi:* The causes for bladder calculi are varied. As stated above, they may form about a foreign body or they may develop in cases with some obstruction at the bladder neck or in the urethra. However, in females, bladder calculi are most frequently seen in the aged, bed-ridden patient into whom it has been necessary to place an indwelling urethral catheter to control urinary incontinence.

The symptoms produced by stones in the bladder are those usually encountered in any inflammatory process involving this organ, namely, frequency, urgency, dysuria, tenesmus and occasionally hematuria. However, in addition, the patient with a bladder calculus often complains of sudden interruption of the urinary stream and frequently has found through experience that micturition may be resumed by some change in position, such as bending forward more acutely.

Diagnosis is usually established by x-ray visualization of calculi in the bladder region. Uric acid calculi, which are less common than the calcium containing stones, will be found only by cystography or cystoscopy since they are non-opaque. The small, thin-shelled variety that sometimes forms in the bladders of patients wearing an indwelling catheter may occasionally be dissolved by irrigation with an acid solution such as that devised by Suby. However, in most cases, removal by litholapaxy or open cystotomy will be necessary.

3. *Cystitis:* Generally speaking, acute cystitis is probably the most frequent urological diagnosis made in females. This is attributable to the fact that in most of the common urological diseases some symptoms of vesical irritability are usually evident. Rarely, however, is acute cystitis a disease entity per se. As a general rule, some disease of the urinary tract either above or below the bladder is the more fundamental problem, the involvement of the bladder, while producing the more outstanding symptoms is of secondary importance. Unless this fact is appreciated one will often err in making the incomplete diagnosis of acute cystitis and will fail to make the complete and accurate diagnosis because the more fundamental pathology in some other portion of the urinary tract is overlooked. For this reason, the importance of complete urological examination in all cases of so-called "cystitis" is stressed.

The symptoms of acute cystitis are well known to all, namely, frequency, nocturia, urgency, dysuria, suprapubic pain and tenesmus. The urine usually shows variable amounts of pus and red blood cells.

Logical treatment, as indicated above, can be instituted only after establishment of complete and accurate diagnosis. The procedures necessary for such diagnosis

may be time-consuming and not immediately applicable or available. The patient with acute symptoms of vesical irritability is in urgent need of prompt alleviation of her distress and is not likely to be willing to temporize while a complete urological survey is being conducted. The usual practice of treating the acute episode with chemotherapeutic agents or antibiotics and some form of bladder sedative (hyoscyamus, serenium, pyridium or urised) is entirely justifiable. Upon subsidence of the acute symptoms one may then proceed with further urological investigation.

The above statements regarding acute cystitis are likewise applicable to chronic cystitis. The latter is seldom a primary disease and the history of chronic or recurrent symptoms of cystitis should immediately alert the physician to the necessity of performing complete urological examination.

A particular variety of chronic cystitis which is unique in certain respects warrants special consideration. This is the condition referred to as chronic interstitial cystitis or "Hunner's ulcer". While it has been occasionally observed in males, it is primarily a disease of females.

The pathology is essentially that of a chronic inflammatory process involving, more or less, all of the layers of the bladder wall. The symptoms are those of severe vesical irritability, and in addition, rather characteristically, suprapubic pain. Unless one is aware of this entity and its certain peculiarities, the patient, even after the usual urological investigative procedures, may be dismissed as being "neurotic".

The urine usually is sparklingly clear and negative on microscopic examination. Cystoscopy, unless very carefully performed and with the express intent of searching for this lesion, may be considered normal. Pyelograms seldom reveal any suggestion of pathology in the upper urinary tract. How then, is the diagnosis to be made?

Cystoscopy, carefully performed as stated above, is the only means by which this condition can be recognized. On such examination, two outstanding characteristics are noted. The bladder capacity is markedly reduced, often accommodating less than 100 cc. and in the vertex one observes relatively avascular, scarred areas often having a radiating or stellate configuration. The mucosa of the bladder apparently has lost its distensibility at these points and on attempting to fill the bladder, minute, slitlike breaks in the mucosa are produced with resulting bleeding from these points. It is probably these areas which previously were interpreted as ulcerations and led to the designation of this condition as Hunner's ulcer.

Treatment, by and large, is not entirely satisfactory as is evidenced by the number of methods which have been advocated. However, of the various measures, periodic hydrostatic dilatation to increase the bladder capacity combined with the use of increasing strengths of silver nitrate either instilled into the bladder or applied directly to the lesion through the open air cystoscope, seems to be the most effective in the hands of the majority of those who are called upon to treat this distressing disease. Other sites of chronic infection, particularly in the cervix or adenexae, should be sought for and eradicated if possible.

One must remember that permanent cure of this condition is unlikely with any method of treatment and both patient and doctor frequently tend to become discouraged. However, with perseverance a great deal can be accomplished. There are certainly no more grateful patients than those who have been afforded some relief, temporary though it may be, from the distressing symptoms of this disease.

4. *Neoplasms:* Carcinoma is the most common neoplasm involving the bladder. No attempt will be made to discuss this disease. The subject is too extensive for a brief presentation such as this. However, it should be noted that this is another disease which may pose under the guise of "cystitis" and further emphasizes the importance of complete investigation of all patients with symptoms referable to

the lower urinary tract.

SUMMARY

The more common and more important diseases of the female urethra and bladder are discussed. The similarity of symptoms produced by these various conditions is indicated and the necessity of complete urological examination for accurate diagnosis is emphasized.

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THE PREVENTION OF MYOCARDIAL INFARCTION *

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SHREVEPORT

This paper is a partial analysis of 92 consecutive cases of myocardial infarction. These cases have been reviewed with but one idea in mind: Will they reveal any significant information which will help us prevent the occurrence of this always serious, frequently disabling, and often fatal condition?

Much, if not most of our thinking in regard to myocardial infarction, has been in terms of treatment, and rightly so, but to properly fulfill our roles as physicians, we should give more thought to a means of prevention of this disease.

Myocardial infarction signifies the necrosis or death of a part of the heart muscle because of an interruption or curtailment of its blood supply.

By far the most important cause of the condition is atherosclerosis of the coronary arteries. Some of the less frequent causes are: syphilitic aortitis complicated by stenosis or occlusion of the coronary ostia, coronary embolism, periarteritis nodosa and other even less frequent causes. There are also contributing and predisposing factors: diabetes, xanthomatosis, myxedema, polycythemia, age, sex, obesity, occupation, race, and heredity.

The diagnosis of myocardial infarction was made in these cases using the following criteria; clinical symptoms, serial electrocardiograms, evidence of tissue necrosis, and, in some cases postmortem examination. These cases have been analyzed from the viewpoint of these factors: age, sex, occupation, obesity, presence of angina prior to infarction, the use of tobacco, and the presence or absence of hypertension.

AGE

The over-all average age was 59.5 years. The average age for men was 57.1 years and the average age of women was 62.9 years. The youngest patient was 41 and the oldest was 86. Eighty per cent of these cases occurred between the ages of 41 and 70 years.

SEX

There were 69 males or 75 per cent, and 23 females or 25 per cent.

OCCUPATION

There is increasing evidence that this disease tends to occur more frequently in those who are engaged in less physically arduous work.[1] These 92 patients were classified into two groups; those who were engaged in some sedentary type of work and those engaged in nonsedentary types of work. Forty-eight patients or 52 per cent were sedentary workers and 44 or 48 per cent were nonsedentary workers. This does not appear significant but it should give us some thought, especially when we analyze the 47 patients who are dead. We now find that 28 or 59.8 per cent of the sedentary workers are dead and only 19 or 40.2 per cent of the nonsedentary workers are dead. Of the 45 patients who are still living, 19 or 42.2 per cent are sedentary workers and 26 or 57.8 per cent are nonsedentary workers.

OBESITY

There is no direct evidence that obesity contributes to the occurrence of myocardial infarction, but these figures appear to be significant in this group of cases: Thirty-four patients, or 35.8 per cent, in the group weighed over 170 pounds, and 58 patients, or 64.2 per cent, weighed less than 170 pounds. Of the patients who

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weighed over 170 pounds, 11 or 32.4 per cent are alive and 23 or 67.6 per cent are dead. Of the patients who weighed less than 170 pounds, 34 or 58.6 per cent are alive and 24 or 41.4 per cent are dead.

ANGINA PRIOR TO INFARCTION

Of the 92 cases, 34 or 36.9 per cent had symptoms of angina to some degree before the occurrence of myocardial infarction and 58, or 63.1 per cent, had no prior anginal symptoms. Fourteen, or 41.1 per cent, of those with prior angina are still living, and 20, or 58.9 per cent, with prior angina are dead. Thirty-one, or 53.5 per cent, without prior angina are living, and 27 cases, or 46.5 per cent, without prior angina are dead.

TOBACCO

Fifty of these patients smoked cigarettes, 40 did not smoke and the habits of 2 were not known. Of those who smoked, 22, or 44 per cent, were alive and 28 or 56 per cent were dead. Of the nonsmokers 20 or 50 per cent were alive and 20 or 50 per cent were dead. Thus, there appears to be no relationship between the use of cigarettes and the occurrence or mortality of myocardial infarction.

HYPERTENSION

Those with blood pressures higher than 150/90 were classified as being hypertensive and those with blood pressures below these figures were classified as normotensive. Twenty-five patients, or 27.1 per cent, had hypertension and 67, or 72.9 per cent, were normotensive. Of those with blood pressure higher than 150/90, 14 or 56 per cent, were alive and 11, or 44 per cent, were dead. Those with blood pressures less than 150/90, 31 or 46.3 per cent, were alive and 36 or 53.7 per cent were dead.

There were some other interesting observations derived from this study:

OVERALL MORTALITY

Of the entire series, 45 patients, or 48.8 per cent, are living and 47, or 51.2 per cent, are dead. The average age of the living patients (at time of onset) was 55.4 years and the average age of the patients who died was 62.9 years.

TABLE 1
LENGTH OF TIME OF LIVING PATIENTS

Time	No. of Patients
2-9 months	6
1 year	4
2 years	13
3 years	4
4 years	1
5 years	5
6 years	5
7 years	3
8 years	4
	—
	45

These 45 patients (Table 1) are living at the present time. In the overall picture 60 patients, or 66.4 per cent, survived their first attack from two months to eight years; 15 patients out of these 60 survivors of first attacks have died of second and third attacks.

MORTALITY OF WOMEN

Of the 23 women, 10 or 43.2 per cent are dead and 13 or 56.8 per cent are still living. All of the women who died, died of primary collapse within the first week following the infarction. Their average age was 68 years. The average age of the 13 women survivors was 59.7 years.

MORTALITY OF MEN

Of the 69 men in the series, 37 or 53.6 per cent are dead, and 32, or 46.4 per cent, are alive. Thirty-one of the 37 dead men died in the first week following the infarction and their average age was 62.8 years. The average age of the surviving men is 54.6 years.

NUMBER OF ATTACKS

In the entire series there were 20 patients, or 21.7 per cent, who had more than one episode of myocardial infarction. Of these 20 patients, 14 or 70 per cent, died in the second attack. Six survived the second attack and are still living. One living patient has had 3 episodes.

There is no doubt that coronary atherosclerosis is the chief cause of myocardial infarction. So often when we are around the autopsy table and can see the very much reduced caliber of the coronary arteries, we wonder not why the patient died, but rather how did he manage to live as long as he did. We do not know

the cause of atherosclerosis but many workers in this field believe, and with much good evidence, that it is an acquired metabolic disease, and many also believe that the faulty metabolism of cholesterol is mainly in error, and that it is a reversible disease.

In trying to assess the problem of atherosclerosis, Gofman[2] has made the assumption that the average atheroma formation is proceeding in the coronary vascular bed at a greater rate in the frankly diseased group, than it is in the so-called normal group. But this average rate of atheroma formation is not always constant, periodic increases in dietary fat raise the lipoprotein serum level and presumably increase the rate of atheroma formation. Atherosclerosis of the coronary arteries then is a reflection of the present rate of atheroma formation plus the accumulated atherosclerosis.

Simple determination of serum cholesterol levels cannot be correlated to the degree and severity of arteriosclerosis in a given individual; however, when cholesterol is separated into its fractions it has been shown that there is quite a marked correlation between the beta lipoprotein fractions and the presence and degree of atherosclerosis.[3]

Just why some individuals will have an increase in the beta lipoprotein fraction is not known. Aldersberg[4] believes that some hormones have a definite effect on lipid metabolism, particularly the thyroid and female sex hormones and probably the hormones of the adrenal cortex.

Much has been written as to the role of obesity in the etiology of atherosclerosis but no definite conclusions have been reached. Many workers have found that in the obese who are dead from any cause, there was a greater amount of atherosclerosis present than was found in control groups of nonobese.[5]

It is a hypothesis that serum lipoproteins represent the source of atheroma lipids. Obesity is associated with an increase in serum lipoproteins and this association may be adequate to account for the excessive atherosclerosis found in the obese. When obese patients are restricted in calories and dietary fat some of them will show a decrease in serum lipoprotein levels but this is not a constant finding from patient to patient. Many of them will not show a decrease in serum lipoproteins.

Patients with atherosclerosis have been treated with female sex hormones and in almost every instance the alpha lipoprotein fraction increased and most times the beta lipoprotein fraction decreased; however, when the estrogen therapy was stopped there was a prompt reversal of the alpha and beta lipoprotein fractions.[6]

Heparin is the only known pharmacologic agent which will decrease serum lipoproteins and when heparin is used the beta lipoproteins are strikingly decreased. Heparin is a difficult drug to use and there have not been enough clinical applications to determine its usefulness in preventing myocardial infarction.

As practicing physicians, is there anything we can do for our patients which may prevent occurrence of myocardial infarction? Is it possible to institute some program which may avoid this complication of atherosclerosis? The facts upon which we may base such an ambitious program are few and meager.

We do not know the cause of coronary atherosclerosis, but we do have some incomplete and partial facts which we can incorporate into our thinking when we are faced with this potential and actual disease;

1. It is an acquired metabolic disease and probably the faulty metabolism of cholesterol is in error and it is a reversible disease.

2. The average rate of atheroma formation is not constant, periodic increases in dietary fat may increase the rate of atheroma formation.

3. The administration of thyroid extract, female sex hormones, and heparin may prevent or reverse atheroma formation in the coronary arteries.

Experience with the administration of these agents has been limited and at the

present time their use does not appear warranted.

However, for our patients who are 35 years old or perhaps younger we should outline a long time program for them and this program should include the following:

1. Systematic exercise, especially for the individuals who do sedentary work.
2. Reduction of weight and a low fat diet for the obese, and a low fat diet for the nonobese.
3. The administration of thyroid extract if the patient is hypothyroid.

SUMMARY

Ninety-two consecutive cases of myocardial infarction have been partially analyzed from the viewpoint of age, sex, occupation, obesity, presence of angina prior to infarction, the use of tobacco and the presence of hypertension. The possible causes of coronary atherosclerosis have been discussed. Based upon our meager and inadequate knowledge, a program has been suggested which may aid in the prevention of myocardial infarction.

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FATAL CASES OF BISMUTH INTOXICATION *

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SHREVEPORT

Very few instances of acute bismuth poisoning of children, resultant from therapy, were recorded prior to introduction of the more soluble bismuth preparations about 1930. Subsequently, there have been numerous case reports of fatal and near fatal intoxications in children due to bismuth salts given orally, rectally, intramuscularly, and intravenously. Intoxication has resulted also in adults, even from such procedures as the instillation of bismuth into the bladder and renal pelvis for the purpose of x-ray contrast media.[1]

The purpose of this paper is to reemphasize the danger inherent in bismuth therapy, to call attention to the acute onset of the toxic manifestations, and to stress the questionable value of bismuth for treatment of acute gingivostomatitis in children.

Within a two month period 4 children with acute gingivostomatitis were admitted to hospitals in this city because of complications arising from treatment with a single injection of a soluble bismuth compound. The name and the amount of the preparations given could not be ascertained, but in each instance it was known to be a soluble bismuth preparation.

Three of these children were admitted to the Confederate Memorial Hospital, a state institution, and the fourth to a private hospital. The 3 admitted to Confederate Memorial Hospital each received a single intramuscular injection of bismuth within thirty-six hours prior to admission; the fourth, suspected but not proven to be a case of bismuth poisoning, received bismuth one week prior to admission to another hospital in Shreveport. This case is included because it was thought to represent a death due to a complication of bismuth therapy, although refusal of permission for autopsy obviated certain proof.

CASE REPORTS

Case No. 1. E. J., colored female, age 2 years. This child was apparently well until December 24, 1954, at which time she became lethargic. On the next day she was still lethargic and complained or her mouth being sore. On December 26, 1954, she was seen by the family physician and was given an injection for "trench mouth"; the nature of the injection was unknown to the parent, but was later found to have been bismuth. Several hours later the child vomited repeatedly, the urine volume decreased and by afternoon she was anuric.

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Coma supervened by the next morning and the patient was brought to Confederate Memorial Hospital. She was seen at 10:00 a.m. on December 27, 1954, in coma, afebrile, and moderately dehydrated. The pupils were widely dilated and failed to react to light; fundoscopic examination was normal. Ulcerative mouth lesions were present. A few coarse rhonchi were heard throughout the lung fields but no dyspnea was present. The liver was palpable 6 cm. below the costal margin. Deep tendon reflexes were hypoactive and there was no evidence of meningeal irritation.

No urine was present in the bladder upon admission and the anuria persisted until death. Approximately 100 cc. of dark colored, benzidine-positive material was aspirated from the stomach. A complete blood count was within normal limits. The spinal fluid pressure, cells, and chemistries were normal. The blood sugar level was 80 mg. per cent, chlorides 547 mg. per cent and carbon dioxide combining power was 28 volumes per cent. A roentgenogram of the chest showed a mild bronchopulmonary reaction in both perihilar regions. A single blood culture was reported to be negative.

Supportive measures included blood transfusion, intravenous fluids, oxygen, and antibiotics. She expired six and a half hours after admission. An autopsy was obtained, with findings as given below.

Case No. 2 P. R., white female, age 13 months. This child, previously in good health, was given an injection of bismuth as prophylaxis after exposure to a sibling diagnosed as having "trench mouth". The injection was given in the early afternoon of January 11, 1955, and by that night she was irritable, listless, anorexic, anuric, and began vomiting. By next day her condition had worsened and she was brought to Confederate Memorial Hospital. Enroute she convulsed and was pronounced dead on arrival.

Autopsy was performed by the coroner and tissue was sent to this hospital for examination. The autopsy report is reported below.

Case No. 3. G. R., white male, age 28 months. This child became ill January 8, 1955, with fever. Three days later the diagnosis of "trench mouth" was made and an injection was given. On January 12, 1955, he was seen in the admitting room of Confederate Memorial Hospital, asymptomatic except for herpetic stomatitis. An injection of 300,000 units of procaine penicillin was given and he was sent home. He was returned on the following day because of progressive weakness and lethargy. Convulsions occurred enroute to the hospital and the child was admitted at 3:00 a.m., January 13, 1955. He had not urinated for the previous thirteen hours. It was learned at this time that the injection which he had received on January 11, 1955, was a bismuth preparation.

On admission he was afebrile, very lethargic and semicomatose. He was perspiring profusely and was having generalized tonic convulsions. The skin was quite pale. His pupils were widely dilated and reacted very sluggishly, if at all, to light. The sclerae were questionably icteric. Fundoscopic examination was normal. Ulcerations of the oral mucous membranes were present. The heart rate was regular but rapid and the blood pressure was 98 systolic, 60 diastolic. The liver was palpated about 4 centimeters below the costal margin. Deep tendon reflexes were hyperactive and positive Babinski reflex was obtained bilaterally.

A tentative diagnosis of bismuth intoxication was made and therapy was started using BAL, 3 milligrams per kilogram of body weight every four hours. The stomach was lavaged with normal saline and a large amount of fresh blood was obtained. A blood transfusion and small amounts of intravenous fluids were given. Spinal fluid examinations and hemogram were normal. Serum carbon dioxide combining power was reduced and the potassium was elevated slightly. Blood and gastric contents were obtained for analysis of bismuth content. No urine was obtained at any time. Convulsions increased in frequency until the patient expired twelve hours after admission.

The bismuth determination in the blood was reported as 0.15 mg. per cent; the gastric contents were negative for bismuth.

An autopsy was obtained, with results as reported below.

*Case No. 4.** B. L., white female, age 6 years. This child became ill November 30, 1954 with fever, cough, and "sore mouth". One or two days later two injections were given; it was later reported that one of them was a soluble bismuth compound. The parents thought that normal urinary frequency decreased during the following week. She was then admitted to a local hospital with the diagnosis of herpetic pharyngitis and vomiting. Daily urine output was approximately 30 cubic centimeters at this time, but by December 14, 1954, the output had increased to nearly normal amounts. However, by December 20, 1954, the urine output had again decreased, edema had increased, and the child's temperature was elevated. She expired December 25, 1954, in congestive heart failure. Permission for autopsy was refused. While in the hospital, urinalyses repeatedly showed low specific gravity, 4 plus erythrocytes, 2 plus albumin and 2 plus hyaline casts. The hemogram was normal on admission. Vomitus was positive for blood. The blood nonprotein nitrogen measured 263 milligrams per cent and creatinine 9.9 milligrams per cent on December 11, 1954.

Urological consultation was obtained and the diagnosis of acute nephritis, type unknown, was made December 11, 1954. Supportive therapy included antibiotics, fluids, plasma, blood, serum albumin, and vitamins.

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* We wish to express our appreciation to Dr. J. R. Strain for permission to present this case.

AUTOPSY FINDINGS *

Autopsy findings on cases Nos. 1, 2, and 3 were similar in all respects as to gross and miscroscopic findings:

Kidneys:

The kidneys were found to bulge on the cut surface, pale and with poor demarcation between cortex and medulla. Microscopic sections showed almost complete necrosis of the proximal convoluted tubules. The necrotic shadows of the cells were usually present but the nuclear staining was usually very poor or absent. There was some damage of the distal convoluted tubule but this was much less marked. The glomeruli were moderately congested. There was no demonstration of inclusion bodies in the tubules, as had been reported at times in bismuth poisoning.[2]

Liver:

Grossly the liver capsule was smooth. On sectioning the organ was mottled in appearance with light yellow and dark reddish brown areas. Microscopic examination revealed marked necrosis involving the periphery and midzone of the lobule. In the necrotic zone there was marked rarefication due to loss of cells and those cells remaining were quite altered, being smaller than usual, the cytoplasm intensely eosinophilic and the nuclei either pyknotic or not staining at all. Frequently granular debris represented the only traces of cells. The cells surrounding the central veins were the least damaged, but even these had degenerative changes.

Lymphoid Tissue:

The spleen and lymphoid tissue showed focal areas of necrosis in the germinal centers.

Brain:

The brain appeared edematous in case No. 3. There were focal areas of devastation necrosis judged to be on the basis of anoxia. Such areas showed honeycombing and the nerve fibers were stained poorly.

Tissue from Case No. 3 was sent to the state analyst for determination of the quantity of bismuth in the tissue. He reported that a qualitative test done on a mixture of brain, liver, and kidney gave a strongly positive test for bismuth.

DISCUSSION

At one time it was generally believed that acute gingivostomatitis ("trench-mouth") in children was caused by a fusospirochetal organism, alone or in symbiosis. Bismuth therapy was introduced on the supposition that it would be effective against this organism. The brilliant researches of Dodd and Buddingh [3] proved that this disease results from primary infection with the herpes virus, which is not affected by bismuth or any other presently known chemical. The infection is self-limited and the child is benefitted most by attention to hydration and nutrition. If secondary infection with spirochetal organisms or other bacteria is considered important in any instance, penicillin or other antibiotic therapy is far safer and probably more effective than bismuth, which has been incriminated in many instances of intoxication and death.

Boyette [4] reported a fatal case of stomatitis in a child who had received 10 mg. of metallic bismuth given as a soluble salt. The child had renal failure and died with nephrosis after sixteen days. Barnette [5] presented 4 fatal cases which had received bismuth suppositories as treatment for stomatitis. Autopsy showed renal and hepatic damage. Weinstein [6] reported 11 deaths of children due to bismuth suppositories and 4 additional deaths in which the suppositories were suspected as the cause of death.

Others [4-9] have reported cases of nephrosis and hepatitis from a single injection of a soluble bismuth compound, with recovery after a period of anuria. Oral bismuth preparations have been shown to be toxic when bismuth subnitrate was changed to subnitrite in the intestine by bacterial action. The absorption of the subnitrite resulted in methemoglobinemia.[10]

The proximal renal tubules are the most severely hit of the body tissues by the toxic action of the heavy metal; the liver is next in severity of damage. Experimental work with rabbits (Kroll) [11] indicated that previously damaged kidneys were more susceptible to bismuth injury than normal kidneys.

It was reported by one of us (CHW) [12] that there is some renal damage associated with acute gingivostomatitis. In the young child the disease appears as an acute illness, usually with symptoms of general toxemia, fever, and dehydration. This dehydration is accentuated by the child's refusal to take food and fluids because of the sore mouth, resulting in impaired renal function. Under these circumstances

* We are indebted to Dr. W. R. Mathews for the pathological reports.

the rapid absorption of soluble bismuth and its filtration through the kidneys in a small volume of urine produces a high concentration of bismuth in contact with the tubular epithelium, enhancing the probability of serious renal damage and anuria.

The hepatic damage in our cases was most severe and was thought to be an important factor in the early death of these children.

BAL was given in case No. 3. Its value could not be determined although others have reported benefit in cases of bismuth poisoning.[8] It was realized that there was a risk in giving it to an anuric patient but it was hoped that it might prevent further liver damage.

It is our opinion that soluble bismuth preparations have no place in the therapy of acute stomatitis in children. In view of the demonstrated toxicity and the availability of newer forms of therapy, its value in the treatment of any condition must be weighed against the inherent danger.

SUMMARY

1. Since the introduction of soluble bismuth salts there have been numerous reports of bismuth intoxication in children.

2. Case reports of 4 fatalities are presented, presumably due to a single injection of a soluble bismuth preparation. Autopsy findings of 3 are summarized.

3. Acute gingivostomatitis in children is a self-limited febrile disease, caused by the herpes simplex virus, for which bismuth is ineffective and highly dangerous.

4. There is inherent toxicity, especially to kidney and liver tissue, from soluble bismuth administration which must be carefully weighed against its possible advantages in the treatment of any condition.

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TAX DEFERMENT ON RETIREMENT FUNDS FOR SELF-EMPLOYED PERSONS

Legislation is needed to provide tax deferment on retirement funds for self-employed persons and others not covered by pension plans. Such legislation is designed to give these groups of persons the same tax advantages now enjoyed by corporation employees. For years, the principle has had the strong support of the American Medical Association. This topic was discussed in these columns previously in October 1953.

At present, two Bills are before Congress the effect of which would be to accomplish just these results. These Bills are HR-9 and 10, generally known as the Jenkins-Keogh Bills. Hearings have been held in the House. Congress adjourned for this year before decisive action by either house. As the same Congress will sit in 1956, there is a possibility that action may be taken when it reconvenes. It is for this reason that the members of the medical profession should inform themselves about this matter and should be in a position to make suitable representations to members of Congress concerning the desirability of favorable action for these Bills.

The background of the situation is necessary in understanding the current status of the Jenkins-Keogh Bills. The Social Security Act of 1935, and its many amendments, was primarily a political maneuver designed to favor certain classes of wage earners and salaried persons, but does not fit the economic pattern of life of the self-employed citizen. In 1942, a provision was written into the law whereby pension plans of employers, if approved by the Bureau of Internal Revenue, would permit the employer's contributions to the pension fund to be considered as a business expense. Such contributions then would not be considered currently taxable income for the employee. More than 26 thousand such pension plans have now been approved by the Bureau of Internal Revenue, and more than 20 million employed tax payers are covered. There has been no provision made to now for the self-employed.

An objective study of our income tax system shows that in this respect the employee is being favored and the self-employed is being discriminated against. An American Bar Association committee, known as the Committee on Taxation of Earned Income, initiated proposals in 1947, designed to make possible pensions for the self-employed with the tax deferment provision. This general theme has

been endorsed by the American Bar Association, American Medical Association, and the other great national organizations of the self-employed in many fields, comprising about a half million persons. The legislation sponsored by these groups, however, would help 11 million nonprofessional self-employed, just as effectively as it would the professional group.

In each Congress since 1947, bills whose aim was to effect these reforms have been introduced. In the presidential campaign of 1952, President Eisenhower made a campaign pledge stating he would favor legislation along these lines. The Chairman of the Platform Committee, at the Democratic National Convention, in 1952, stated that in his opinion the Democratic platform clearly implied approval of the principle of the Jenkins-Keogh Bills. In his State of the Union message of February 2, 1953, President Eisenhower said: "No less important is the encouragement of privately sponsored pension plans." However, in spite of the approval of both political parties and the pronouncement of the President favoring such legislation, no action has been taken.

The causes for this seem to be as follows: Congress takes what the Ways and Means Committee gives it and, except under conditions of unusual pressure, follows the recommendations of this Committee. The Committee, except under similar circumstances, accepts what the bureaucrats of the Treasury Department recommend, and the latter have chosen to oppose this type of legislation. Frank G. Dickinson,* in his statement before the Ways and Means Committee, answers the several objections to these bills. The contention that the Bills are for rich men is without foundation, as the Department of Commerce statistics show that the average income of the 11 million self-employed and the 50 million employed persons are about the same. It has also been stated that the tax benefit enjoyed by the employed persons is too small to worry about. However, the Chamber of Commerce of the United States presents figures to show that 130 identical companies contributed 8 per cent of the payroll to pension and profit sharing benefits in 1953. Another contention against the Bills is that they would create inequalities against employed people. The answer to this is that employers in the United States contributed 4.9 billion dollars in 1953 in various private pension and welfare plans. A still further contention is that legislation of this type would result in a 100 million dollar loss in revenue to the government. The common sense answer to this is that if the 100 million is being collected by an injustice it should be lost and the loss added to the 3 to 4 billion being wasted in Europe and Asia each year in the foolish generosity of our "Save the World" plan.

It is further reported that the Secretary of the Treasury and his assistant recently told the Ways and Means Committee that notwithstanding the administration's campaign promises, later reiterated in the State of the Union message, the administration could not endorse this type of legislation reducing revenue until more money is in sight and until the budget is balanced. This is the same as if the Treasury were to say that it is all right to waste money in Europe and Asia in deficit financing, but it is not all right to allow this taxpayer to save himself from being discriminated against.

It seems unfortunately true that the average man in Congress votes not so much to favor legislation that he regards as best, but to favor groups that he fears the most.

Physicians, and other people, have a long-time personal interest in securing the passage of legislation such as the Jenkins-Keogh Bills. They should make it clear to the members of Congress that the 11 million self-employed demand this tax adjustment, and they should be made to feel that the political wrath of a half million professional persons is threatening.

*Dickinson, Frank G.: Reappraisal of Social Security, J.A.M.A. (March 5) 1955.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

ATTENTION! ALL MEMBERS

"Dear Dr. Cole:

I have received Dr. C. E. Boyd's letter of May 20, which no doubt was sent by your office. I am in general agreement with everything contained in the letter. The increase of $15.00 in the Society dues should not be objected to by the vast majority of the membership. Most of us take very little part in the activities of the Society, therefore we should not begrudge the additional $15.00 to help out those of you who are doing all the work."

The above letter was received from one of our faithful and understanding members, Dr. E. E. Lafferty of Bogalusa. It is very gratifying to receive a letter like this. It is encouraging to the officers and members of our Society, who are, at all times, with limited funds, striving to protect, not only the members of our profession but the honest and unsuspecting citizens of our State from the continuing scheming, law and back breaking cultists who are illegally practicing medicine in Louisiana. These cultists are just as guilty of violating the laws of our State as are the thieves who break into your homes, in the darkness of night, and steal your purse and its contents—even more guilty since they have the audacity to openly defy our laws in mid daylight by practicing their cult, which according to the decisions of the State and United States Supreme Courts, is the practice of medicine. By doing this, they defy and slap in the face, our respective District Attorneys and other law enforcement officers throughout the State. They definitely advertise in the official Parish newspapers that they are practicing chiropractic and they know they are illegally practicing medicine without a license to do so. Still these violators are permitted to continue their crime, unmolested by our duly elected district attorneys and other officers, who are sworn to support our State and U. S. Constitutions and to uphold the laws by prosecuting all violators or offenders of our statutes.

The medical profession, although giving to our people, including our duly elected state officials, the best medical care of any country in the world, and protecting them to such a degree that life's expectancy has been prolonged from 32 years in 1908 to 69 years in 1955, has seemingly been classed as the forgotten segment of our population, so far as any appreciation is shown or extended to them for their efforts and services to mankind.

We are badly in need of the support and cooperation of our District Attorneys and other duly elected officials in our fight to protect our citizens against these wholly unqualified individuals (chiropractors) who are illegally practicing medicine in Louisiana.

We should by all means, speak to and strive in every possible way to secure the support and cooperation of the District Attorneys and other Parish officials in protecting the public against these incompetent and dangerous individuals. Inform these officials just what these chiropractors stand for, how unqualified by education and experience they are, and that they believe every disease, including polio, diphtheria, lockjaw, pneumonia, appendicitis, and many other germ diseases are caused by displacement of the bones of the spine and they claim that they can cure these diseases by adjusting the bones making up the backbone. Tell them how ridiculous is their claim.

Why should the District Attorneys not prosecute these offenders of the law as they do the common thief? Of course, the thief, as a rule, can't or does not vote and the chiropractors do. This may be the explanation.

If your District Attorney refuses to cooperate with you in helping to uphold the law and protect the citizens against these cultists, you should, not as members, but as citizens exert every effort to elect a man who will honor the oath of his office to protect the people by prosecuting, alike, all violators of the statutes.

C. Grenes Cole, M. D.

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Dr. John H. Dent, New Orleans

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RADIOLOGY
Dr. Henry M. Dnhe, New Orleans

SURGERY
Dr. Walter F. Becker, New Orleans

UROLOGY
Dr. C. O. Frederick, Lake Charles

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

LSU TO RESUME REFRESHER-TYPE COURSES

The Louisiana State University School of Medicine in cooperation with the Louisiana State Medical Society will resume its one-day refresher-type courses in the fall. These courses are designed not only to keep the practitioner abreast of new developments in various fields of medicine but also to review the fundamentals of diagnosis and therapy of various diseases. This year for the convenience of practicing physicians courses will be given not only at the Medical School in New Orleans but also at the Confederate Memorial Medical Center in Shreveport and at other centers in the state.

Three courses have been scheduled for the fall of 1955, as follows:

Gastroenterology—New Orleans, Saturday, September 24
(Under the direction of Dr. Gordon McHardy)

Heart Disease—Shreveport, Wednesday, October 26
(Under the direction of Dr. Marion D. Hargrove)

Surgical Diagnosis—Shreveport, Wednesday, November 16
(Under the direction of Dr. Paul D. Abramson)

Programs for each course may be obtained by writing Dr. Edgar Hull, Associate Dean. Suggestions for the subject matter of future courses will be welcome.

It is hoped that physicians who read this announcement will acquaint their colleagues with the opportunities offered by these courses which are designed to meet the needs of busy practitioners.

NEW OFFICERS FOR RADIOLOGICAL SOCIETY

In May of 1955, the Radiological Society of Louisiana held its annual meeting and the following officers were elected:

President, G. M. Riley, M. D., 1513 Line Ave., Shreveport, La.; Vice-President, Manuel Garcia, M. D., 820 Maison Blanche Bldg., New Orleans, La.; Secretary-Treasurer, W. S. Neal, M. D., 602 Pere Marquette Bldg., New Orleans, La.

62ND ANNUAL CONVENTION OF MILITARY SURGEONS

The Association of Military Surgeons of the United States will hold its 62nd Annual Convention at the Hotel Statler in Washington, D. C. on November 7, 8 and 9, 1955.

The Association is the only international society devoted to the military aspects of medicine, dentistry, nursing, veterinary medicine, and allied sciences. Noted speakers, appropriate ceremonies and a variety of entertainment will make this year's meeting attractive to attending members and guests alike. There will be an outstanding scientific program devoted to the latest advances and trends in the specialty of military medicine.

For the entertainment of the members and guests, a full schedule of events is being arranged. As in the past, one of the outstanding features is the Honors Night Dinner on November 9 at which the Sir Henry Wellcome Medal and Prize, the Gorgas Medal, the Stitt Award, the McLester Award, the Louis Livingston Seaman Prize, and the Founder's Medal will be presented.

Further information may be obtained from the Association's Office, Suite 718, New Medical Building, 1726 Eye Street, N.W., Washington 6, D. C.

PAIN IN PEPTIC ULCER

"It is clear that peptic ulcers are indeed 'peptic' ulcers, that they arise from the digestive action of acid gastric juice, that inflammation (chemical) lowers the pain threshold so that the normally insensitive bowel becomes sensitive, that the pain arises in the ulcer itself, that the usual stimulus for pain is the acid gastric juice, and that in a tender lesion mechanical stimuli such as spasm,

peristalsis, touching or pinching may evoke pain."

PALMER, W. L.: Editorial, *American Journal of Medicine* 18:513 (April) 1955.

CARELESS HANDLING MAKES CANDY DRUGS DANGEROUS

Carelessness about reading labels and storing medicine out of reach are contributing to an apparent increase in preschool-age illnesses and deaths from overdoses of candy-flavored medicines.

The warning against mishandling of potentially dangerous drugs was made by the American Medical Asociation's Committee on Toxicology, in a report in the (May 7) Journal of the A.M.A.

Committee Secretary Bernard E. Conley said that among preschool-age children, the group in which accidental poisonings is most frequent, "drugs are responsible for 33 per cent of the fatal poisonings." Children's death rates "from the ingestion of poisons are four times higher in the United States than in England, even though overall death rates for both countries are generally comparable," he said.

Most poisoning accidents are caused by "ignorance, carelessness" and unsafe storage, the report said. Many of these products "that are packaged and flavored to look like candy are in reality potent drugs, some of which can be dangerous with overdoses."

KIDNEYS REACT TO CHANGING EMOTIONS

Three medical researchers have found evidence that the kidneys, which help man adapt to his physical environment, also may help him to cope with the emotional problems of everyday life.

They reported in the April 23 issue of the Journal of the American Medical Association that kidney action is affected by anxiety, fear, anger, and other reactions to daily difficulties.

The kidneys maintain a balance of water and salts in the body. In some illnesses the kidneys "work overtime" to keep the necessary balance. Now physicians are learning that the kidneys are affected by everyday crises as well as disease crises.

In 400 tests on five persons leading their normal lives, it appeared that when they needed "increased alertness and readiness for action," the kidneys helped them by damming up reservoirs of water and mineral salts in the body. When the crisis—a job problem, family illness, disapproval of colleagues—was over, the kidneys flushed the extra water and salts from the body.

Drs. William W. Schottstaedt, Oklahoma City; Harold G. Wolff, New York, and Major William J. Grace, now at Fort Knox, Ky., said kidney reaction to emotional warnings in daily living is similar to that in illness. In a pneumonia patient, for instance, the kidneys hold extra salts and water in the body during the danger period, and flush them out when the crisis is over, and they are no longer needed.

CITRUS TWICE DAILY IN HYPERTENSION

A diet restricted in sodium but containing as normal a selection of foods as possible, including citrus fruits twice daily, has been found effective in maintaining clinical improvement in a group of patients with hypertension. The studies were conducted by Dr. Frederick T. Hatch and associates at Goldwater Memorial Hospital and the College of Physicians and Surgeons, New York. In contrast to the rigid and often impracticable rice diet frequently used in hypertension, Dr. Hatch allowed the patients 1 small orange or ½ grapefruit for breakfast and 1 cup of orange or grapefruit juice in the evening, as well as small amounts of such foods as lean steak, mushrooms and other low-sodium vegetables, blueberries and pineapple. (American Journal of Medicine, 17:499, 1954.)

ASPIRIN AND HORMONE TREATMENT SUGGESTED IN RHEUMATIC FEVER

Early treatment of rheumatic fever with aspirin combined with one of the adrenal or pituitary hormones was suggested recently (Nov. 4) as more effective than either drug alone in suppressing inflammation of the heart.

Use of the hormone, however, should be limited to as short a period as appears clinically helpful, two New York doctors reported to the First Interim Scientific Session of the American Rheumatism Association, holding a one-day meeting at the National Institute of Arthritis and Metabolic Diseases. Administration of an adrenal or pituitary hormone over a long period "may result in serious toxicity," according to Dr. Edward E. Fischel of the Bronx Hospital, and Dr. Charles W. Frank of the Presbyterian Hospital.

On the other hand, they said, short-term therapy with the hormones cortisone, hydrocortisone or ACTH is almost always followed by a flareup of rheumatic inflammation. To guard against such flareups, they recommended prolonged and uninterrupted use of aspirin.

DECREASED SALT INTAKE AND NON-SMOKING DOES NOT REDUCE HYPERTENSION

Individuals over 40 who had decreased their salt intake for ten years and who do not smoke showed a higher prevalence of hypertension according to a preliminary inquiry among 799 persons as reported in an article by C. A. D'Alonzo, M. D., of the E. I. Du Pont de Nemours & Co., of Wilmington, Del., published in the November issue of *Industrial Medicine and Surgery*, the official publication of the Industrial Medical Association.

The study also confirms previous indications that there is a greater chance of the children having hypertension when one or both parents have it, than when neither parent has it. "It is also interesting that this chance seems to be slightly greater when the mother has hypertension than when the father has it," Dr. D'Alonzo adds.

Making no definite conclusions, Dr. D'Alonzo in his article explains the details of the preliminary inquiry supporting them by very interesting statistical tables and urging industry to collect such personal data which will enable a more definite study of the relation of family history to the development of hypertension.

STUDY FINDS ATABRINE EFFECTIVE IN TAPEWORM

The antimalarial Atabrine meets the requirements of a drug to treat tapeworm more "ideally than preparations customarily used," according to Dr. K. M. Paeckelmann, in an article abstracted from the *Journal of the American Medical Association* (156:74, Sept. 4, 1954).

His conclusions are based on a review of the literature and his personal observations since 1944, when Atabrine's effectiveness against tapeworm was first discovered. In 347 of 488 patients with Taenia saginata or Taenia solium treated with Atabrine, the tapeworm with head was expelled. The tapeworm was expelled, although the head could not be found, in an additional 46 patients, Dr. Paeckelmann states.

In the procedure followed, he notes that the tapeworm was expelled within two to four hours. Suggesting that administration of Atabrine be made through the duodenal tube, he adds that chances of successful treatment are increased by this method.

DOCTORS NEED HELP TO CURE EMOTIONALLY ILL PATIENTS

One of the biggest problems of today's physician is the diseases resulting from frustration, loneliness and lack of occupation—diseases he cannot cure alone.

Dr. Robert J. Needles, St. Petersburg, Fla., said in a recent (Oct. 9) Journal of the American Medical Association that what is most needed for persons afflicted with this "modern pestilence" is "better understanding of life away from physicians' offices."

"The medical profession, with all its progress, needs outside help on the problem of the emotionally ill, displaced, abandoned, chronically unhappy, or otherwise handicapped persons," he said. "Physicians can suggest, they can advise, they can warn, but they cannot go with these persons into the community and lead them into new interests and new drives to demonstrate reasons for living."

"This is, and must be, the responsibility of society," he said. "There is too much wastage of human resources in the communities' own back yards . . . new and stimulating opportunities must be furnished from outside the medical profession."

EARLY CONSERVATIVE THERAPY CALLED BEST METHOD TO ARREST ARTHRITIS

Early and intensive use of a course of conservative treatment is "more likely to achieve a true arrest of rheumatoid arthritis than any other measure of therapy," according to Dr. Norman O. Rothermich of the Department of Clinical Medicine, Ohio State University College of Medicine.

Writing in *American Practitioner and Digest of Treatment* (5:647, 1954), Dr. Rothermich emphasizes that no measures, or drugs, now available can cure the disease. In line with a program of conservative treatment, he says that "most cases are best treated with simple aspirin, and I see no advantage to using other more complex salicylate combinations which are only more expensive."

The author further notes that aspirin, and other salicylates, have some beneficial action in "all rheumatic diseases over and above their analgesic effect."

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BOOK REVIEWS

Practice of Allergy; (Revised by J. Harvey Black, M. D.), by Warren T. Vaughan, M. D., 3rd ed., St. Louis, Missouri: C. V. Mosby Company, 1954, 1164 pages. Price $21.00.

Vaughan's Practice of Allergy has been one of the classics in the field of clinical allergy for over fifteen years; this "revised" third edition by Dr. Black is most welcome. In the preface to this third edition, the author states that "To one who works in the field of allergy progress often seems woefully slow, but when one begins to collect the literature and to note the changes wrought by the years, he is astonished at the great mass of material and the great number of changes that must be noted."

It is this reviewer's opinion that the greatest strength of this book lies in the thoroughness of the documentation of "the great mass of material and the great number of changes that must be noted." The bibliography itself is made up of 57 full pages of listings, more than doubling that in the second edition. For a bibliography of this size it is representative and fairly selective. In itself, this makes the book invaluable as a reference source.

There are fifteen parts, containing 66 chapters

covering all phases of clinical allergy. An excellent chapter by Dr. James Holman on pulmonary function studies has been added. Mr. Owen C. Durham has brought up to date the authoritative chapters on pollen counts and surveys, and significant changes have been made in the chapter on fungus allergy by Dr. J. B. Howell. The book contains numerous well chosen illustrations of many types.

The chief and practically only adverse criticism is that in some places there is a tendency toward listing of facts and material with relating little critical evaluation. A certain amount of this might be expected in one volume attempting to "cover" the complex, and as yet incompletely explored, realm of allergy. This, however, detracts somewhat from the value of this book at the undergraduate level—its greatest value being as a ready reference book for the specialist and researcher, and also for the general practitioner who wishes to increase his knowledge of the allergic phenomena and their treatment.

J. P. McGovern, M. D.

The Management of Endocrine Disorders of Menstruation and Fertility; by Georgeana Seeger Jones, M. D., Springfield, Illinois, Charles C Thomas, 1954, Pp 198, Price $5.75.

It is a book worthy of the library of any physician. In reading it, one detects the tremendous amount of research involved. In such a brief review, one cannot do justice to the author's efforts.

The book begins with a descriptive study of the endocrine organs and their products. There is an illuminating chapter on methods of assay in normal physiological and pathological manifestations of menstruation.

The chapter on the causes of habitual abortion and the management and follow up of tumors of the chorion are clearly explained.

The book is supplemented by a long bibliography.

Adolph Jacobs, M. D.

The Care of Your Skin; by Herbert Lawrence, M. D., Boston, Mass., Little, Brown and Company, 1955, Pp. 95, Price $2.50.

This book is somewhat inappropriately titled as it does not deal with the care of the skin in general, but concerns itself rather with acne vulgaris. It is designed for young people to read. It describes well the pathogenesis and treatment of this disturbing disorder.

It can be recommended by physicians to their patients who suffer from acne.

Vincent J. Derbes, M. D.

The Skin: A Clinicopathologic Treatise; by Arthur C. Allen. First Edition, St. Louis, Missouri: C. V. Mosby Company, 1954. 1048 pages, 495 illus. Price $25.00.

Both dermatologists and pathologists will welcome this first edition of a contribution long lacking in medical libraries. It is a colossal volume, (1048 pages; weight 25 pounds), whose binding paper, format and printing are excellent. In addition to a frontispiece in color there are 495 full page illustrations placed most advantageously on pages opposite pertinent descriptive material. Clinical photographs in general are good but are excelled by numerous photomicrographs of both low and high power magnitude. These photomicrographs are worth the price of the book alone. As an aid to the differential diagnosis of similar or related diseases the author has grouped several plates of these diseases on the same page for ready comparison.

Whatever regrets dermatologists may have that this treatise was not written by one of their specialty may be comforted by the capabilities of the author whose interest and experience in dermal pathology is well known. The book's value for reference is limited due to the author's preferential allotment of space to controversial diseases rather than common ones. Although readers will readily recognize the author's dogmatic treatment of some controversial subjects, they will appreciate his accepted authenticated personal contributions to such subjects as nevi and melanocarcinoma.

This book no doubt will aid in the delayed fraternization between dermatologists and pathologists who should avail themselves of this classic text.

James W. Burks, Jr., M. D.

PUBLICATIONS RECEIVED

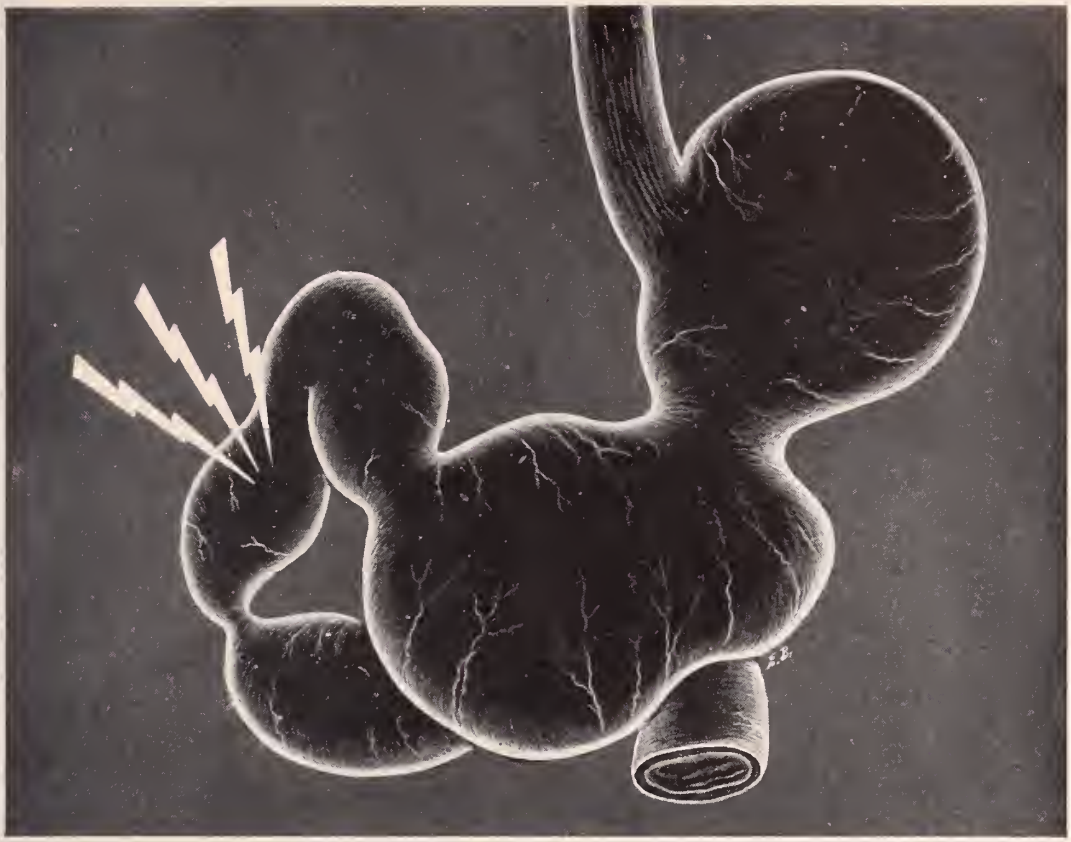
Grune & Stratton, Inc., N. Y.: Cardiology Notebook, by Alfred P. Fishman, et al.

Lange Medical Publications, Los Altos, Calif., Handbook of Pediatrics, by Henry K. Silver, M. D., C. Henry Kempe, M. D., and Henry B. Bruyn, M. D.

W. B. Saunders Co., Phila.: The Practice of Dynamic Psychiatry, by Jules H. Masserman, M. D.; A Textbook of Medicine, edited by Russell L. Cecil, M. D., and Robert F. Loeb, M. D. (9th edit.); Pathology for the Surgeon, by William Boyd, M. D., (7th edit.); Surgical Forum; 1954 Clinical Congress of the American College of Surgeons, Vol. V; Differential Diagnosis; The Interpretation of Clinical Evidence, by A. McGehee Harvey, M. D., and James Bordley III, M. D.; Collected Papers of the Mayo Clinic and the Mayo Foundation, 1954.

Charles C Thomas, Publisher, Springfield, Ill.: Denial of Illness; Symbolic and Physiological Aspects, by Edwin A. Weinstein, M. D., and Robert L. Kahn, Ph.D.; Cough Syncope, by Vincent J. Derbes, M. D., and Andrew Kerr, Jr., M. D.; Saddle Block Anesthesia, by Ray T. Parmley, M. D., edited by John Adriani, M. D.

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Until recently the general opinion was held that ulcer pain was primarily caused by the presence of hydrochloric acid on the surface of the ulcer.

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1. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, Gastroenterology *25*:416 (Nov.) 1953.

2. Ruffin, J. M.; Baylin, G. J.; Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, Gastroenterology *23*:252 (Feb.) 1953.

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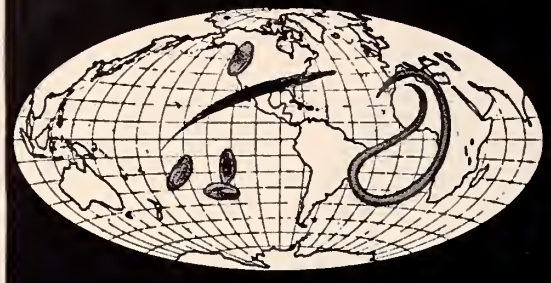
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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.: J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.: Brit. M. J. 2:755, 1953.

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Brown, H. W.: J. Pediat. 45:419, 1954.

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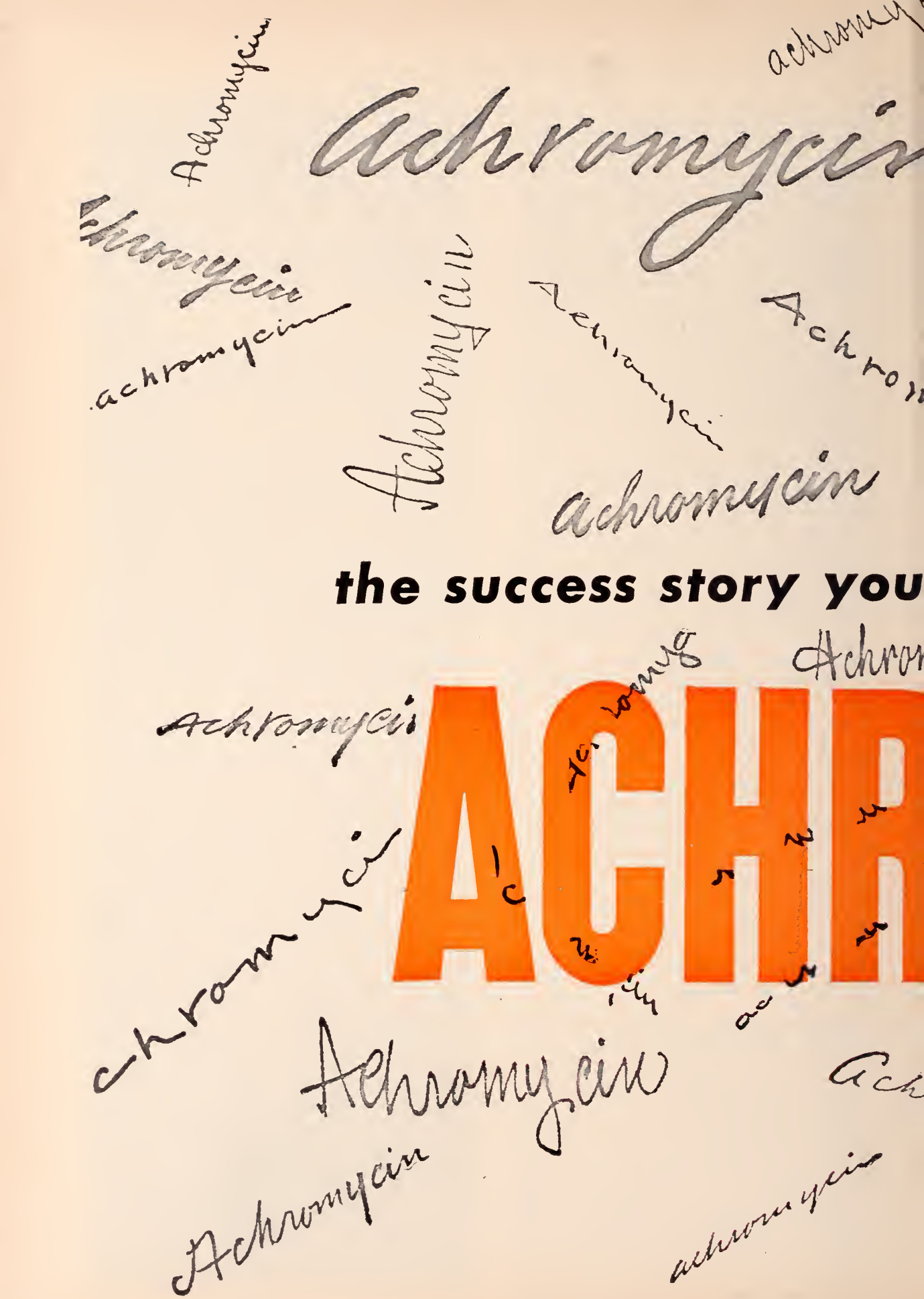
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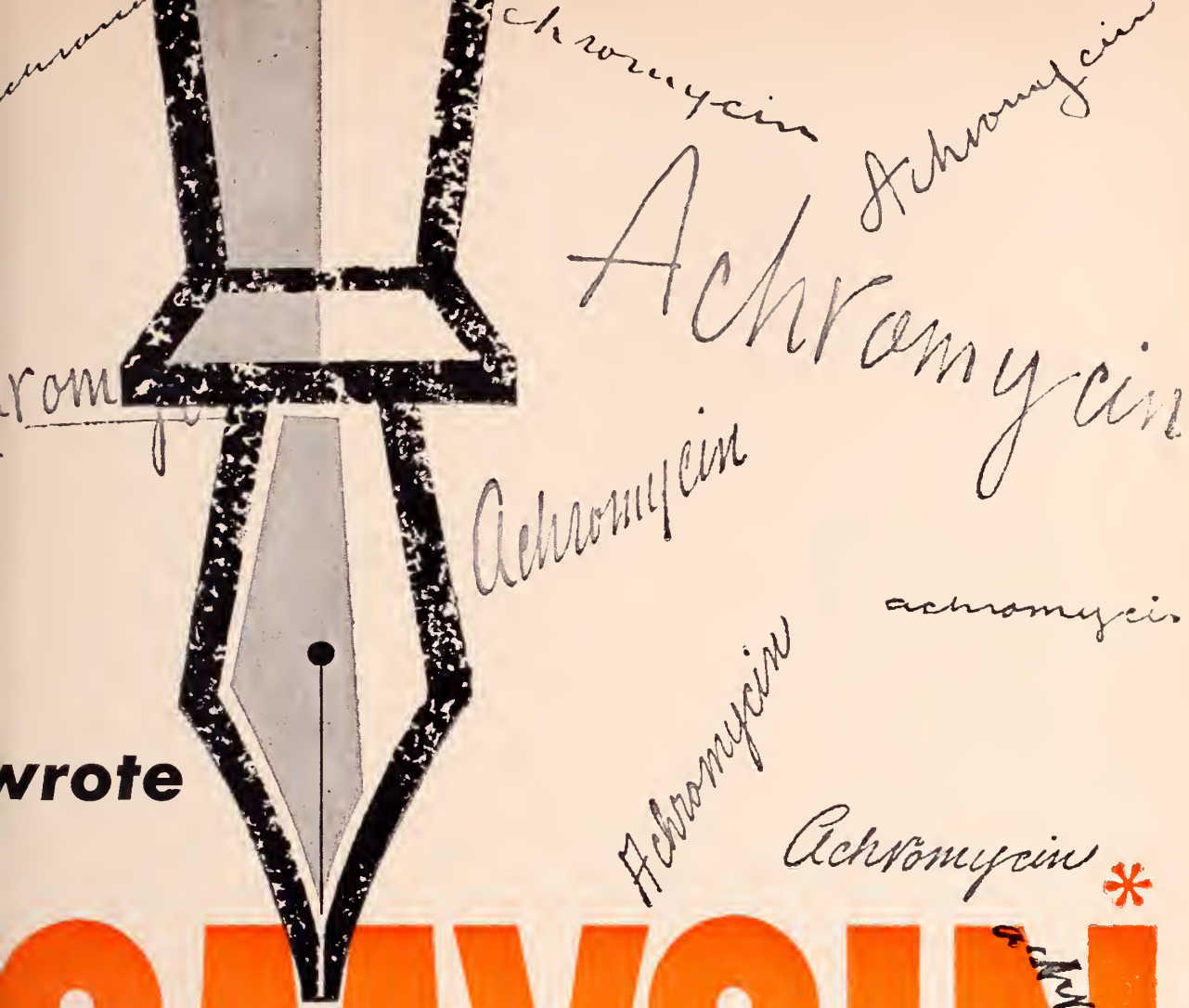
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Lederle

The Full-Liquid Diet pulls its own weight!

Packing good nutrition into the full-liquid diet for your patient who must stay on it a long time is sometimes difficult. But with a blender or egg beater, almost any food can be used.

Mix the same foods many ways—

Strained chicken in milk makes "bisque"—in tomato juice it's "creole." Strained liver and bacon double-times the same way.

Your patient may like cottage cheese whipped into milk flavored with chocolate and mint, or he can blend it with cranberry juice sparked with lime.

Strained carrots go in milk, broth, or pineapple juice. Flavor the milk blend with nutmeg, the broth with parsley, and the juice with cinnamon and brown sugar. An egg or skim milk powder may be added for a protein bonus.

Strained fruits in fruit juices do well with a squeeze of lemon or a touch of mint.

Then serve them up with dash—

Bright colored drinks look good in clear glass—pale ones in gayly painted glasses. And if a mixture looks drab, hide it in a bean pot or a round jam jar wrapped in a napkin.

Add a bright plastic straw. And for garnish, try a sprinkle of spice, a spoonful of sherbet, a dab of whipped cream, or a lemon slice hooked on the edge of the glass. Or frost the rim by dipping the glass in water, then in sugar.

Of course, only you can tell your patient *just which foods* he can and must have for his specific condition. But these suggestions can help guide him within the limits you set.



United States Brewers Foundation

Beer—America's Beverage of Moderation

pH 4.3; 104 calories 8 oz. glass (AVERAGE OF AMERICAN BEERS)

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BRAND OF MECLIZINE HYDROCHLORIDE

Motion sickness affects people of all ages because almost everyone is sensitive to labyrinthine irritation induced by travel on land and sea and in the air.

Bonamine has proved unusually effective to prevent and treat this minor but distressing complaint. And a new agreeable method of administration is now offered by the incorporation of this well-tolerated agent, with its prolonged action, in a pleasantly mint-flavored chewing-gum base. 90% of the drug content becomes available in only five minutes of chewing.

Bonamine is also indicated for the control of nausea, vomiting and vertigo associated with labyrinthine and vestibular disturbances, Menière's syndrome and radiation therapy.

Supplied:

Bonamine Tablets *(scored and tasteless) 25 mg.*

New
Bonamine Chewing Tablets *25 mg.*



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KARO SYRUP SOLVES A SUMMER PROBLEM



Karo is the answer when other carbohydrate modifiers cause flatulence, colic, fermentation or allergy. It is bacteria free and hypoallergenic . . . produces no reactions. It is easily digested and assimilated by premature and newborn infants, well or sick.

Babies gain weight rapidly on Karo formulas. One ounce provides 120 calories of solid nutrition derived from dextrose, dextrins and maltose. The palatability of Karo encourages full feedings.

Karo mixes readily in all proportions with cow's milk, evaporated milk and water. Available at all grocery stores. Light or dark Karo Syrup may be used interchangeably in the formula.

The *foundation* of the individualized formula for 3 generations

CORN PRODUCTS REFINING COMPANY

17 Battery Place, New York 4, N.Y.

NEWS for every Doctor who smokes
for every patient who seeks smoking advice

NEW WATER-ACTIVATED FILTER REMOVES UP TO 92% OF NICOTINE, 76% OF TARS FROM ANY CIGARETTE, PLAIN OR FILTER-TIP*

Uses Oriental "Hookah" Technique to Cleanse, Cool Smoke, Leaving Full Tobacco Taste and Flavor

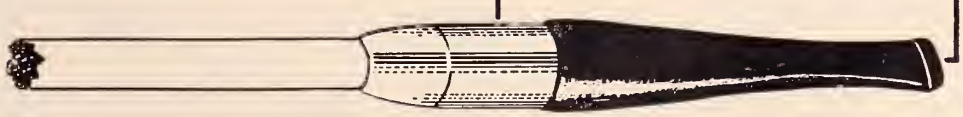
Aquafilter, the unique water-activated filter, offers a new, practical approach to the problem of how to limit and control nicotine and tar intake without reducing the pleasure of smoking.

HOW *Aquafilter* WASHES OUT NICOTINE AND TARS

The AQUAFILTER, a replaceable cartridge of absorbent material, holds about one milliliter of water—enough to trap three to four times its weight in nicotine. Acting as a miniature condenser, the AQUAFILTER chills gaseous nicotine to the liquid phase. At the same time it strips the smoke of tars.

The mainstream of smoke from the average king size cigarette, in tests conducted under standards established by the U. S. Government, shows only 8% of nicotine and 24% of tars passing through the AQUAFILTER. Temperature of smoke is lowered three to four times more effectively than by any other smoking method tested.*

*Independent testing laboratory reports available on request.



The AQUAFILTER will soon be available throughout the United States and Canada

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READING TIME—1 MINUTE

A FEW FACTS FOR THE BUSY DOCTOR WHO WANTS THE

Latest Information About Filter Tip Cigarettes

Your patients are interested in cigarettes! From the large volume of writing on this subject, Brown & Williamson Tobacco Corp. would like to give you a few facts about *Viceroy*.

Only Viceroy gives you, your patients, and all cigarette smokers 20,000 Filter Traps in every filter tip. These filter traps, doctor, are composed of a pure white non-mineral cellulose acetate. They provide the maximum filtering efficiency possible without affecting the flow of smoke or the full flavor of Viceroy's quality tobaccos.

Smokers report Viceroys taste even better than cigarettes without filters.



King-Size Filter Tip

VICEROY

World's Most Popular Filter Tip Cigarette

Only a Penny or Two More Than Cigarettes Without Filters





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Indicated wherever oral cortisone or hydrocortisone is effective • Available in 5 mg. tablets in bottles of 30 and 100 • Usual dosage is ½ to 1 tablet three or four times daily

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Fewer side effects at effective dosage levels

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Fall, 1955

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Fee for each course, $10.00

Please make plans early to attend, and notify

Dr. Edgar Hull, Associate Dean

See Medical News Section, this issue.

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unexcelled for nutrient value... safety... convenience...

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Dextrogen, a most convenient concentrated liquid formula for infants, is made from whole milk modified with dextrins, maltose and dextrose. Fortified with iron and vitamin D, it provides adequate amounts of all necessary nutrients (except vitamin C).

In normal dilution it contains more pyridoxine (vitamin B_6) than does human milk.

Requires no stirring or whipping, no bothersome measuring equipment . . . merely add water, and the formula is ready.

Dextrogen feedings are most economical, too, costing less than a penny per ounce in normal dilution.

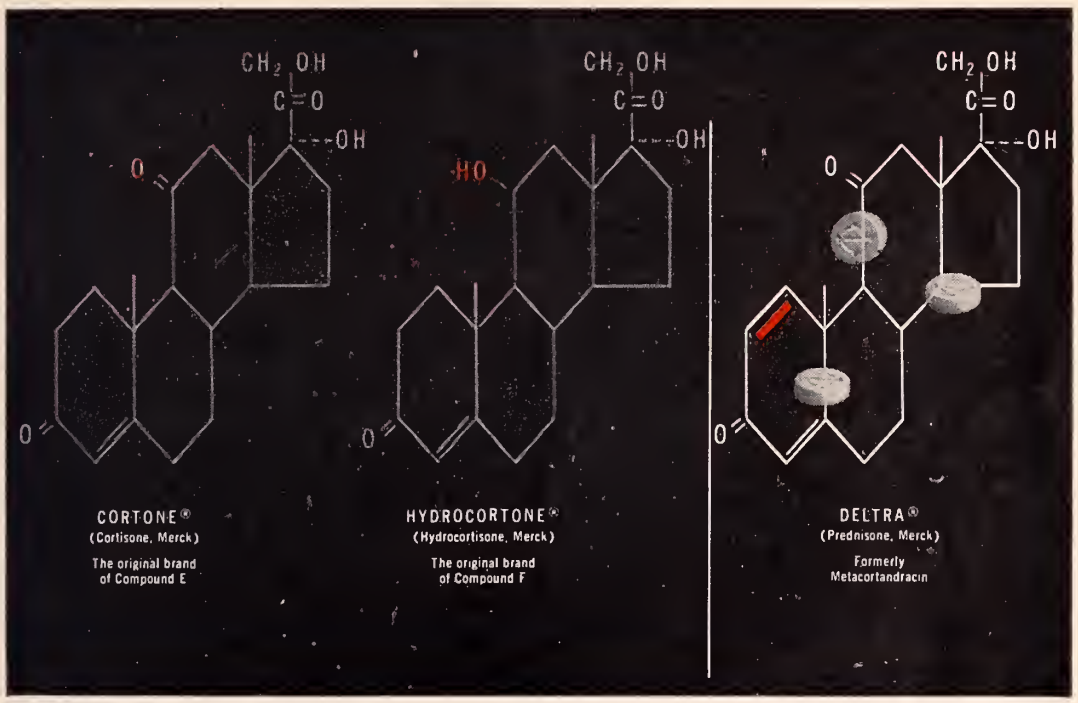
- Contains (in normal dilution) about 50 per cent more protein than does human milk.
- Zero tension curds assure ease of digestion.
- Fat content almost one-third lower than that of human milk. Uniform dispersion by homogenization provides ease of fat digestion.
- Less allergenic.
- Mixed carbohydrates allow spaced absorption and easy assimilation.
- Constancy, uniformity, and optimal safety secured by strict laboratory control.

The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

THE NESTLE COMPANY, INC. • *Professional Products Division* • White Plains, New York

DELTRA® TABLETS

(PREDNISONE, MERCK)
(FORMERLY METACORTANDRACIN)



DELTRA is the Merck brand of the new steroid, prednisone

(FORMERLY METACORTANDRACIN)

DELTRA is a new synthetic analogue of cortisone. DELTRA produces anti-inflammatory effects similar to cortisone, but therapeutic response has been observed with considerably lower dosage. With DELTRA, favorable results have been reported in rheumatoid arthritis with an initial daily dosage of 20 to 30 mg. and a daily maintenance dose range between 5 and 20 mg.

Salt and water retention are less likely with recommended doses of DELTRA than with the higher doses of cortisone required for comparable therapeutic effect.

Indications for DELTRA: Rheumatoid arthritis, bronchial asthma, inflammatory skin conditions.

SUPPLIED: DELTRA is supplied as 5 mg. tablets (scored) in bottles of 30.

SHARP & DOHME

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When she's frightened and tense (*and getting more upset by the minute*) . . .

When she balks at scary, disquieting examinations (*before you've even begun*) . . .

When prompt sedation is indicated (*and a pleasant taste will help*) . . .

short-acting

Nembutal®

(PENTOBARBITAL, ABBOTT)

elixir



will quiet her fears . . . relieve her tensions . . . and reduce the effect of her psychic trauma.

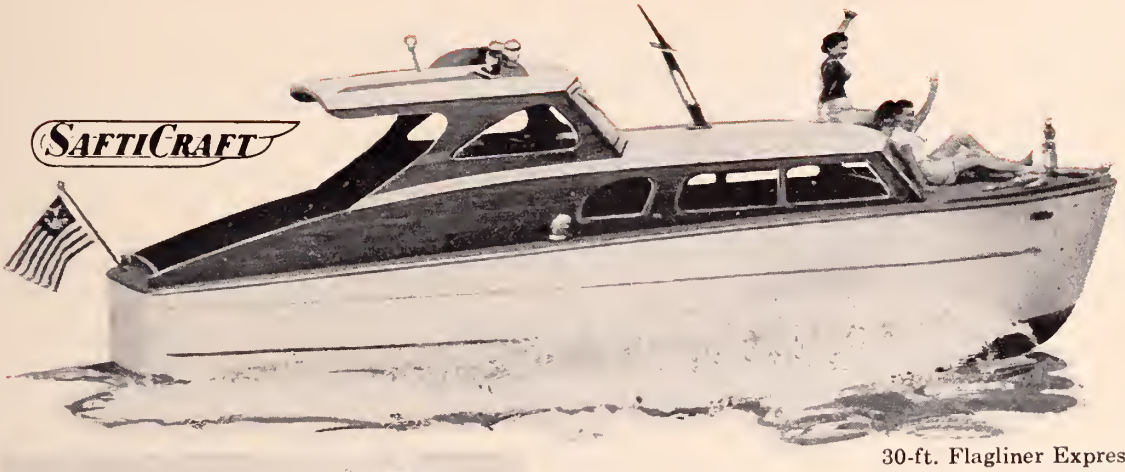
Onset of action is prompt, and duration may be short or moderate, depending on the dose. Also, since the drug is quickly and completely destroyed in the body, your patient has less tendency toward that next-day "hangover."

Administer pleasant-tasting NEMBUTAL Elixir straight from the spoon, or mix it with water, fruit juice, milk or infants' formula. The dosage required is small—only about one-half that of many other sedatives. Abbott

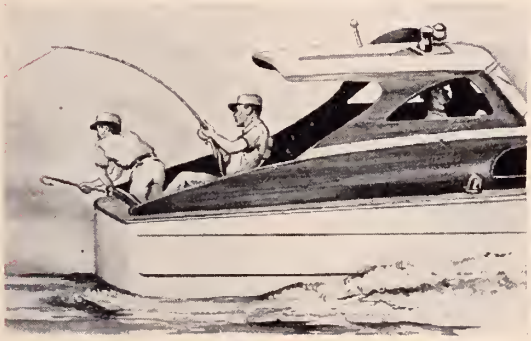
Each teaspoonful of NEMBUTAL *Elixir represents 15 mg. (¼ gr.)* NEMBUTAL *Sodium.*

508160

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Ladies love the big, roomy cabin. luxurious equipment and galley.



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When symptoms indicate recreation afloat, here is the boat that fills your prescription with integrity. Thirty feet of sturdy steel Safticraft, made by craftsmen familiar with Gulf water requirements for top performance and safety. Speed up to 23 miles per hour. Comfortably large enough for yourself and your family or friends. Luxuriously appointed. Sleeps four restfully. Because it is built right here in Louisiana, you have the finest service facilities close at hand. We make smaller—and larger—models, but this size has proved to be the outstanding favorite among professional men from coast to coast. This season, invest in life-preserving relaxation and fun afloat. Send in the coupon for further details and prices.

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of

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Presented by the Calcasieu Parish Medical Society

Majestic Hotel

SEPTEMBER 16TH AND 17TH, 1955

Guest Speakers

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"Differential Diagnasis af Vaginal Bleeding"

Mervin H. Grassman, M. D., Dallas, Texas
"The Use and Abuse af Blaad Transfusians"
"Naw the Rh Baby Can Be Saved"

B. F. Baylestan, M. D., Haustan, Texas
"Whiplash Injuries af the Cervical Spine"
"Treatment af Comman Injuries af Upper Extremities"

Pat Handley, M. D.
"Presacral Inclusion Cysts"
"Camman Lesians Seen in Practascapic Examination"

Charles Martin, M. D., Dallas, Texas
"Treatment af Cancer af the Skin"

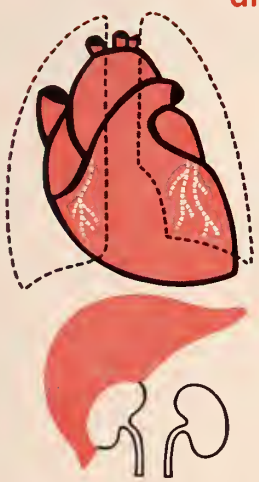
Lectures, clinicapathalagic canferences, raund-table luncheans, medical motion pictures, scientific exhibits and technical exhibits.

Registration fee—$10.00

For information concerning the Assembly meeting, write Mrs. Pat Seaman, Assistant Secretary, P. O. Box 568, Lake Charles, Louisiana, or Phone HEmlock 6-9551.

does your diuretic cause acidosis?

know your diuretic



diuresis without depletion of alkaline reserve—avoiding dangers of acid-base imbalance—is characteristic of the organomercurials. In contrast, the diuretic activity of carbonic anhydrase inhibitors, acidifying salts, and the resins depends on production of acidosis.

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BRAND OF CHLORMERODRIN

(18.3 MG. OF 3-CHLOROMERCURI -2-METHOXY-PROPYLUREA IN EACH TABLET)

- action not dependent on production of acidosis
- no "rest" periods... no refractoriness

a standard for initial control of severe failure

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BRAND OF MERALLURIDE INJECTION SODIUM

Leadership in diuretic research

Lakeside LABORATORIES, INC., MILWAUKEE 1, WISCONSIN

88755

Crescent Sam had the drop on him—briefly



"I'M a she-wolf from Bitter Creek and it's my night to howl!"

Crescent Sam stepped into the kerosene glow of the biggest saloon in Perry, Oklahoma, and fired a six-gun into the air.

Suddenly, he spotted the stern-faced peace officer you see here. He aimed and pulled.

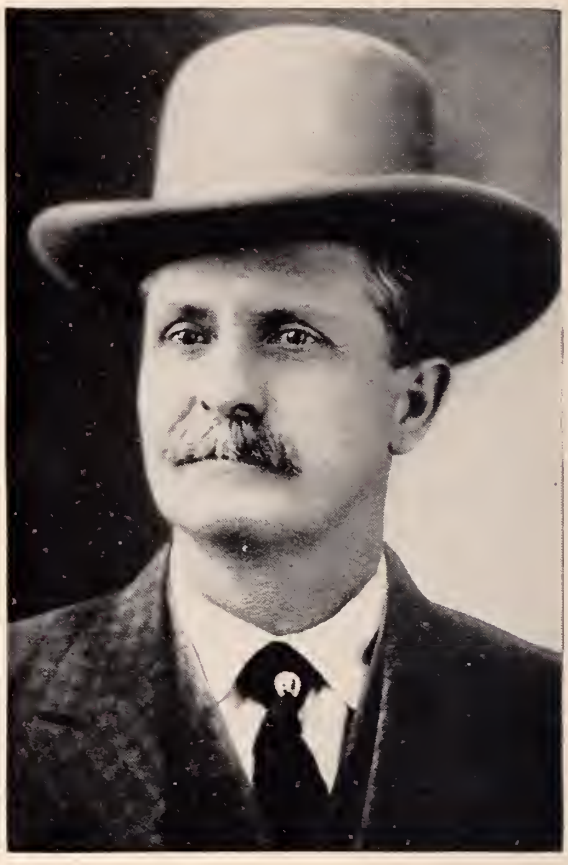
And in a gun flash, he lay dead.

Crescent Sam, thief and killer, had made the fatal mistake of trying to outshoot Bill Tilghman, Tilghman who, shooting from the hip, could hole the ace of spades at 30 feet. Tilghman who once said, "I never shot at a man in my life and missed him."

Bill Tilghman was no legendary gun fighter. He was the genuine article, a fearless, honest frontier marshal described by the San Francisco Examiner as "the best peace officer the West ever knew."

His hardy spirit and resolute courage are a legacy today's 160 million Americans proudly share. And when you consider that those Americans are the people who stand behind U. S. Savings Bonds, it's easy to see why these Bonds are one of the world's finest investments.

Why not guard *your* security the safe way that helps your country? Invest in—and hold—U. S. Series E Savings Bonds.



It's actually easy to save money—when you buy United States Series E Savings Bonds through the automatic Payroll Savings Plan where you work! You just sign an application at your pay office; after that your saving is done for you. And the Bonds you receive will pay you interest at the rate of 3% per year, compounded semiannually, for as long as 19 years and 8 months if you wish! Sign up today! Or, if you're self-employed, invest in Bonds regularly where you bank. There's no surer place to put your money, for United States Savings Bonds are as safe as America!

Safe as America—U. S. Savings Bonds

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The Cancer Commission of the Louisiana State Medical Society

CANCER REGISTRIES*

Cancer registries provide case histories which form the invaluable statistical core of the American Cancer Society's research and control programs. Beginning January 1, 1956, hospitals having facilities such as cancer clinics or diagnostic clinics which are approved by the American College of Surgeons must keep cancer registry records on *all* cancer patients diagnosed and/or treated in the hospital—whether or not the patient comes under the direct surveillance of the cancer facility. The American College of Surgeons also will add hospital cancer registries to its classification of facilities for which approval may be requested.

* From CANCER NEWS, Vol. IX, No. 3

Louisiana State Department of Health

S. J. Phillips, M.D., M.P.H.

State Health Officer

Why so many physicians

SPECIFY PABLUM CEREALS



TOMMY started on Pablum Rice Cereal at the age of 2 months. He likes its smooth texture (all Pablum Cereals are smooth). Pablum Cereals give him plenty of iron—½ oz. supplies 4.2 mg.—to help prevent iron deficiency anemia.

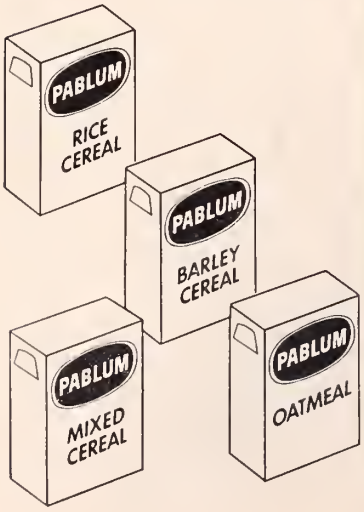


MARY LOU likes Pablum Oatmeal. Since she has been eating Pablum Cereals her growing appetite is satisfied longer.



BARBARA—like other children—enjoys *all* four Pablum® Cereals. Each variety tempts her awakening taste buds. Pablum Cereals are scientifically packaged to insure freshness. The 'Handi-Pour' spout is an extra convenience for busy mothers.

Pablum Rice Cereal
Pablum Barley Cereal
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Pablum Products

DIVISION OF MEAD JOHNSON & COMPANY
EVANSVILLE, INDIANA, U.S.A.

NAL of the LOUISIANA STATE MEDICAL SOCIETY

PTEMBER, 1955

LOUISIANA STATE MEDICAL SOCIETY

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More than **96%** of all acute bacterial respiratory infections in children respond readily to...

ILOTYCIN, PEDIATRIC

(Erythromycin, Lilly) Ethyl Carbonate

Lilly

Safe, well tolerated, and pleasant to take. Bottles of 75 cc.

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532168

The Poliomyelitis Vaccination Program in Louisiana

The State Board of Health is charged with the responsibility of deciding what percentage of poliomyelitis vaccine allocated to Louisiana under the National Voluntary Distribution Plan is to be released for use by physicians and what percentage is to be allocated to public agencies.

At this time the Public Health Service has been advised by the State Board of Health to instruct the manufacturers that all poliomyelitis vaccine allocated to Louisiana is to be shipped through normal commercial channels for use by physicians.

(See Medical News Section for further and important information regarding this Program)



Louisiana State Department of Health

S. J. PHILLIPS, M.D., M.P.H.,

State Health Officer

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Every Bottle Sterilized

1950 Cortone® | 1952 Hydrocortone®
1954 'Alflorone' | 1955 Deltra®

'Hydeltra' tablets

(PREDNISOLONE, MERCK) 2.5 mg.—5 mg. (scored)

the delta$_1$ analogue of hydrocortisone

Indications: *Rheumatoid arthritis*
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Inflammatory skin conditions

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Upjohn

Ulcer protection that lasts all night:

Pamine*-Phenobarbital
BROMIDE

Tablets

Each FULL-STRENGTH tablet contains:

Phenobarbital	15.0 mg. (¼ gr.)
Methscopolamine bromide	2.5 mg.

Dosage:
One tablet one-half hour before meals, and 1 to 2 tablets at bedtime.

Each HALF-STRENGTH tablet contains:

Phenobarbital	8.0 mg. (⅛ gr.)
Methscopolamine bromide	1.25 mg.

Dosage:
While the dosage and indications are the same as for the full-strength tablets, this tablet allows greater flexibility in regulating the individual dose, and may be employed in less severe gastrointestinal conditions.

Supplied:
Both strengths in bottles of 100 tablets; the full-strength tablets also available in bottles of 500.

Elixir

Each 5 cc. (approx. 1 tsp.) contains:

Phenobarbital	8.0 mg. (⅛ gr.)
Methscopolamine bromide	1.25 mg.
Alcohol	20%

Dosage:
1 to 2 teaspoonfuls three or four times daily, depending upon requirements in the individual patients.

Supplied: Pint bottles

*TRADEMARK, REG. U. S. PAT. OFF.—THE UPJOHN BRAND OF METHSCOPOLAMINE

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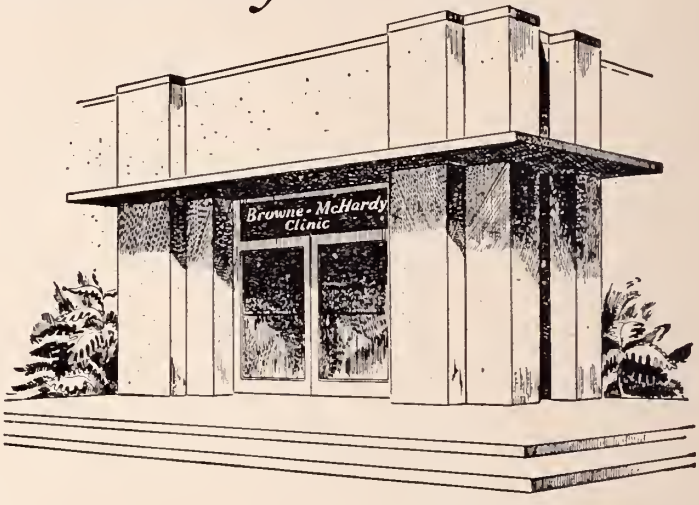
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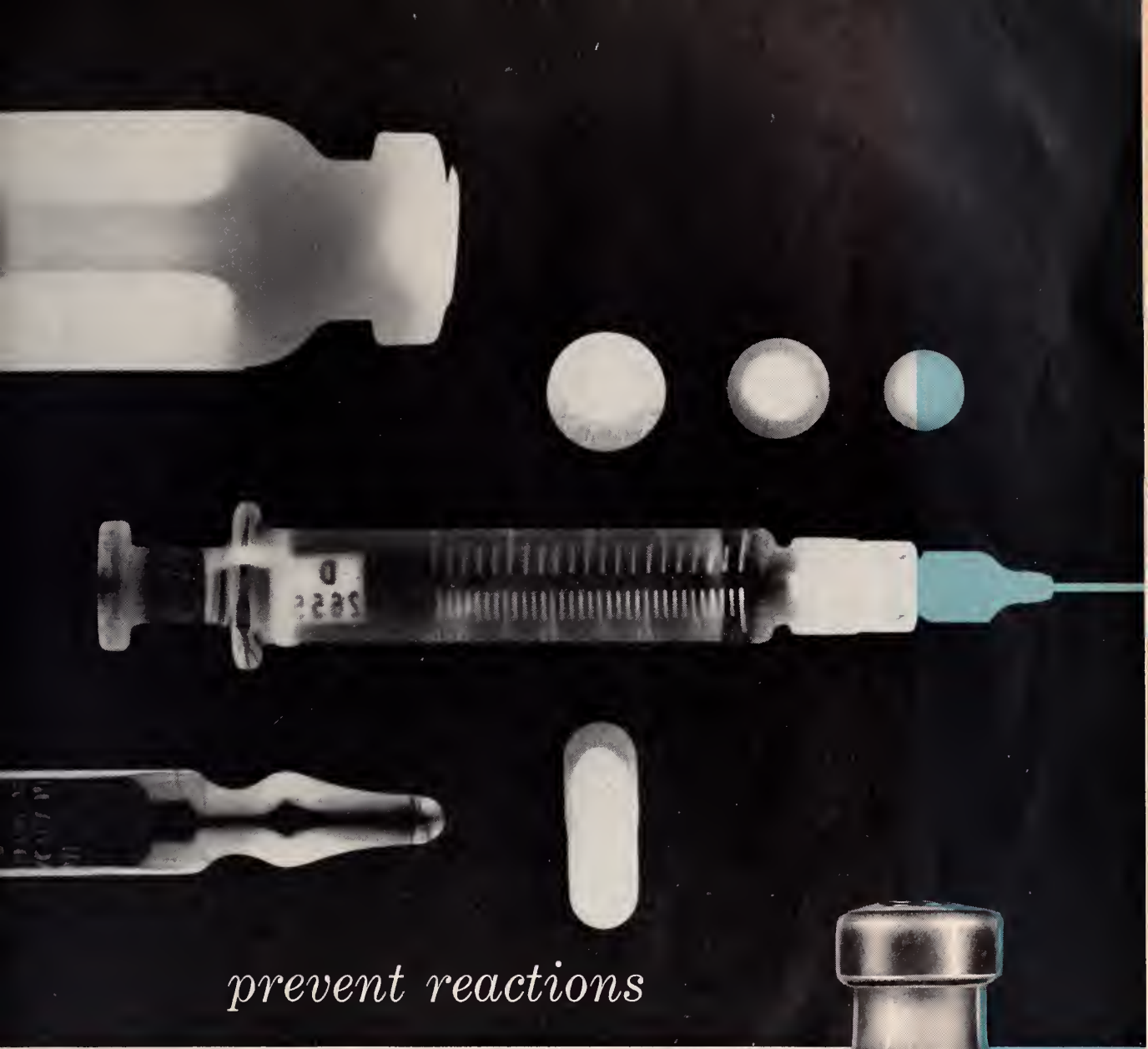
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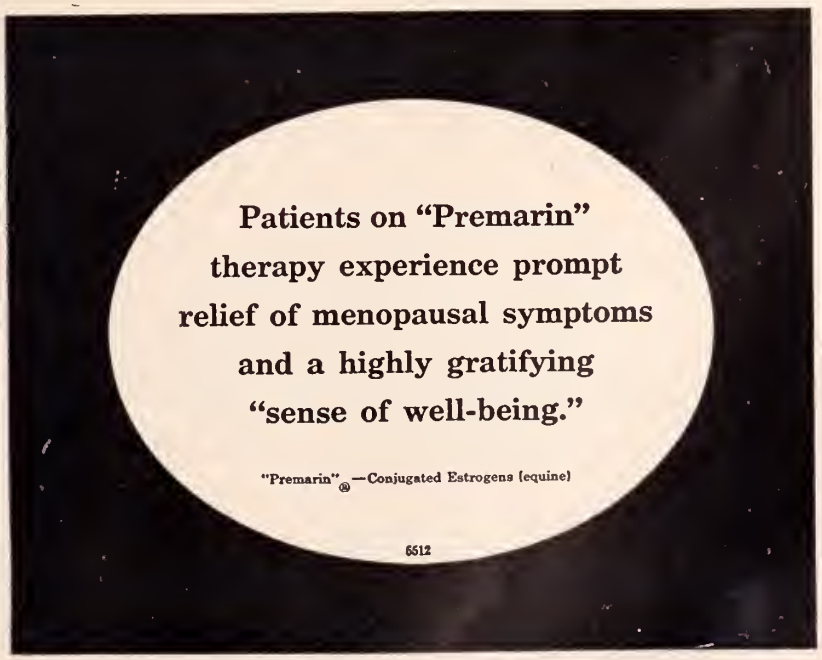
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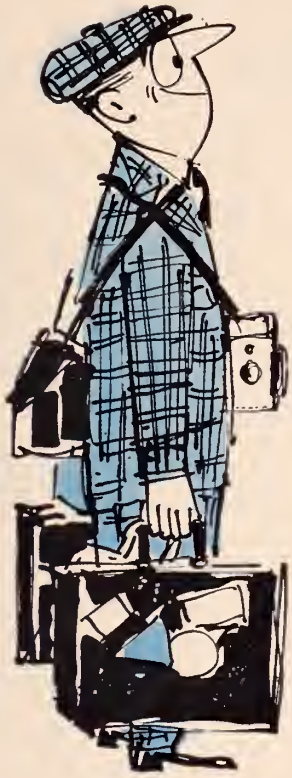
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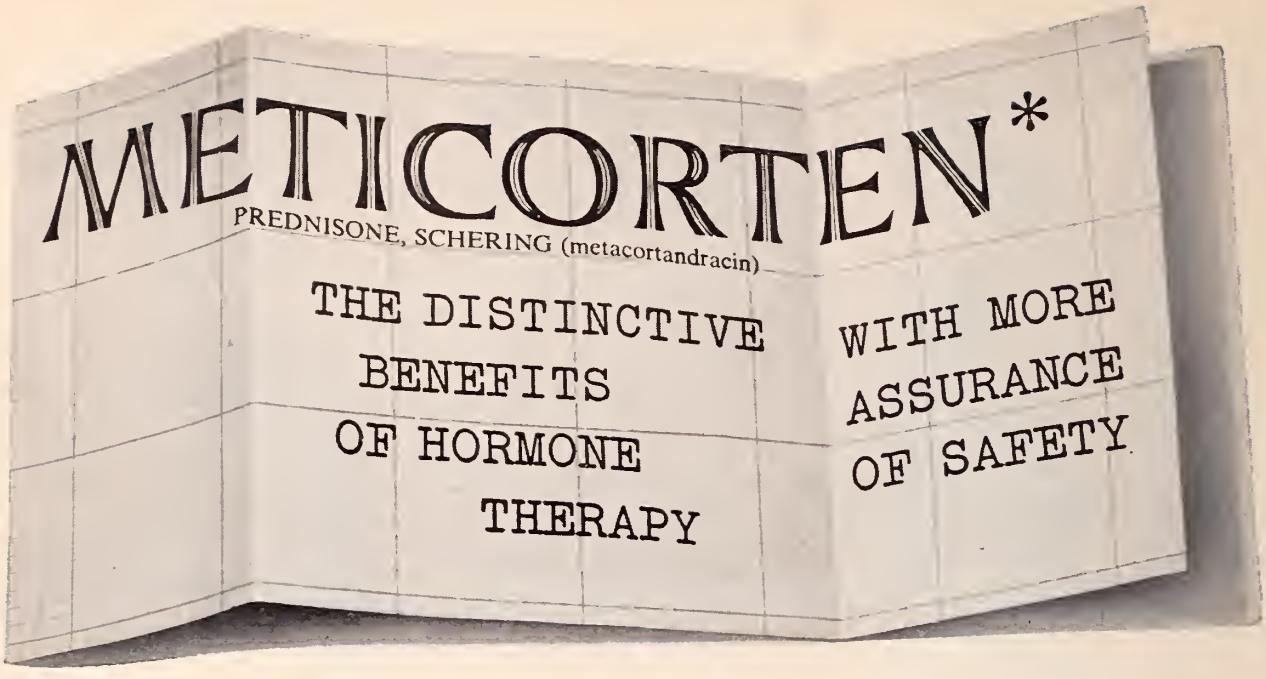
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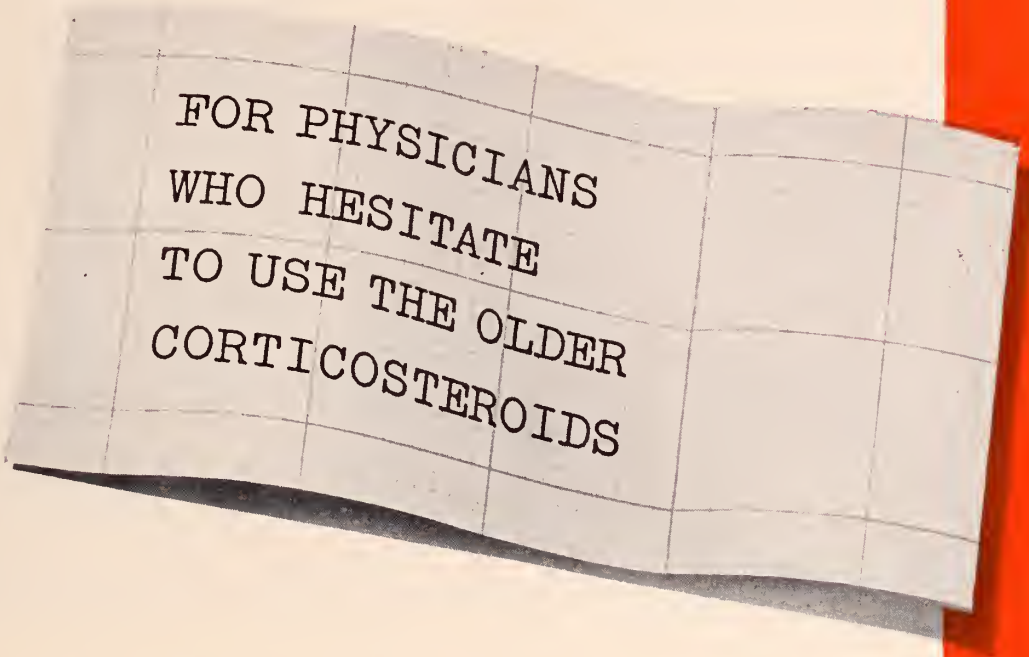
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OTOLARYNGOLOGIC PROBLEMS OF GENERAL PRACTICE *

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THOMAS P. RAGGIO, M. D. †
BATON ROUGE

Since I am among the large number of realists in my specialty who understand that otolaryngology is necessarily the concern of the general practitioner as well as of the otolaryngologist, I make no apology for offering a few practical suggestions in this overlapping field. Before I pass on to them, however, it might be well to recall the place which otolaryngology occupies in general practice.

In 1950, Lierle [1] found, in a questionnaire sent to 574 general practitioners in Iowa, that otolaryngology occupied from 1.5 per cent to 80 per cent of their practice over a selected period. The average was 22 per cent. Other studies have shown much the same range and substantially the same average.

It is both interesting and distressing that the graduates of our medical schools were very poorly trained for this responsibility in the past, and are none too well trained for it at the present time. In 1952, McCaskey [2] questioned the presidents of 34 local chapters of the American Academy of General Practice concerning the training they had received in otolaryngology and received from them replies not calculated to induce any sense of complacency in the medical schools of the country. Most of those who replied to the questionnaire had learned normal regional anatomy by reading about it. Not more than a quarter had examined normal subjects before they were required to diagnose abnormal or pathologic conditions. The majority had never seen a normal larynx, or, if they had, they did not know what they were looking at. Some of them had been taught didactically the normal landmarks of the membrana tympani but they had been given few opportunities to observe them. Only half had been taught to make a complete examination of the normal nasal cavity. It is not surprising, in view of these lacks, that few of these physicians felt that they had received sufficient training in physical diagnosis and that none of them had been taught adequate hearing tests.

Yet these replies should not have surprised anyone. As McCaskey [3] had pointed out in 1948, in a report to the American Academy of Ophthalmology and Otolaryngology, the allotment for didactic teaching in eighty-seven medical schools in the United States and Canada at that time did not exceed sixty-eight hours for the total course in any school, that in some schools the allotment was only five hours, and that the average was twenty hours. In 1953, in a second, similar investigation, Hoople [4] found that the range of hours of instruction had increased from eight to one hundred and thirty-six hours, that the

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† From the Department of Otolaryngology, Tulane University of Louisiana School of Medicine, New Orleans.

hours of outpatient teaching in fifty-nine schools now ranged from four to ninety hours, and that the average allotment for the course was 47.3 hours.

All of the men questioned by McCaskey in 1952 wished that they had had more training in otolaryngology. There is no question that even now more should be given. In small communities, remote from urban medical centers, the general practitioner has no choice but to include otolaryngology in his practice. Even in large communities it is both logical and desirable that a certain amount of otolaryngology should be done by the general practitioner and the family doctor. On the other hand, the acceptance of those facts of medical life places a definite responsibility upon the medical schools in the teaching of otolaryngology.

It is not always easy to meet the challenge, as I know from personal experience. There are few vacuums in the medical curriculum, and a great deal of competition from every department for such as do exist. I speak as a veteran of the battle. We have rearranged and increased the teaching in otolaryngology at the Tulane University School of Medicine. We are greatly encouraged by what we have accomplished. But we are not yet offering sufficient instruction to meet the needs of the graduate who expects to do general practice and to include some otolaryngology in it.

THE COMMON COLD

Time will permit me to speak of only a few of the numerous problems which the general practitioner will encounter in the field of otolaryngology. The most frequent, and in many ways the most important, is the common cold, or acute rhinitis. It is rightly the business of the general practitioner, though in its complications, which are many, it often becomes the responsibility of the otolaryngologist. Neither gets any satisfaction from its management. You will forgive me for quoting the tired old joke that the common cold lasts a week with treatment and seven days without treatment, but it is still generally true. Nonetheless, the situation can be improved if it is remembered—as it usually is not—that all colds are not alike. As a matter of fact, they fall into two distinct categories and need two separate kinds of treatment. There are, however, certain common denominators of therapy. One is that local medication with nose drops, sprays and inhalers is to be avoided, as being useless and potentially harmful. The other is that antibiotic and chemotherapeutic agents should be withheld unless there are definite signs of secondary infection. The promiscuous use of these valuable agents for the common cold is a general and serious therapeutic error.

The first variety of cold begins with a sensation of dryness and a sore, scratchy feeling in the throat and nasopharynx. Actual soreness of the throat and nasopharynx is a later development, which is accompanied by a watery nasal discharge, lacrimation, headache, and general malaise. Sneezing begins on the second or third day. With this type of cold there is usually a temperature elevation, from 99 to 101° F., and often higher in children.

Treatment is chiefly general. The patient should be kept in bed, in a well heated and well ventilated room, until he is free from fever for at least twenty-four hours. His fluid intake should be increased. Therapy is limited to papaverine in combination with codeine (gr. ¼ each) every four hours unless nasal blockage is severe. Then some type of medication such as paredrine hydrobromide aqueous is prescribed. This is the type of cold which sometimes goes on to pneumonia and it should be treated with respect due to that possibility.

The second variety of common cold begins with sneezing, nasal blockage, and a profuse nasal discharge. In contrast to the variety just described, pharyngeal and nasopharyngeal symptoms are a late development. Also in contrast to the first variety, malaise is a minor complaint and there is no elevation of the temperature. Therapy is limited to antihistamines, combined with vasoconstrictor drugs. Local

medication has a particularly irritating effect. In this variety of acute rhinitis, if treatment is begun early enough, the attack can sometimes be aborted and can frequently be mitigated.

Children are peculiarly susceptible to colds and the course is generally longer in them than it is in adults. If, however, a cold persists longer than a week, signs of secondary allergy are almost the rule and antihistaminic therapy is indicated. If the dosage is correctly adjusted for age, side effects need not be feared. Children who present a thick, tenacious nasal discharge can often be remarkably benefited by the use of tip suction in the office.

When colds and upper respiratory infections are frequent, empirical medication is contraindicated and a general survey of the child's health is mandatory. Often at this age, as well as at other periods of life, an excessive intake of carbohydrates will be found responsible. Some allergy may also be the basis of the trouble. Possible sensitivity to milk, chocolate, and carbonated drinks should be investigated. So should house dust, which is often introduced by way of forced air heating systems. The fuzzy, dust-carrying dolls and toys so dear to children and so innocent-looking are frequently the explanation.

It should be emphasized, however, that the persistence of nasal symptoms in a child, as well as recurrent attacks of acute rhinitis, demand careful investigation before an allergic basis is assumed. Allergy must be distinguished from infection. Disease of the sinuses must be excluded. The tonsils and adenoids must be exonerated. The era of promiscuous tonsillectomy has long since passed, but tonsillectomy is still a valuable procedure in selected cases. In short, before antihistamines or any other medication is prescribed, diagnostic procedures are indicated and a definite diagnosis should be arrived at.

NASOPHARYNGITIS

Infection of the nasopharynx may give rise to a variety of symptoms and manifestations, not all of which are localized. They include a nonproductive cough, chronic or recurrent bronchitis, pain in the fifth and ninth cranial nerves, otitis media, impairment of the hearing, and persistent low-grade fever. The symptoms and signs usually bear some relation to the amount and distribution of the lymphoid tissue present in the nasopharynx.

Most infections of the nasopharynx arise from a postnasal discharge. Sometimes, as just intimated, an excessive amount of lymphoid tissue is responsible. Sometimes a diet high in carbohydrates is the cause.

Therapy depends upon a determination of the cause. Textbooks of otolaryngology have a great deal to say about the postnasal discharge, and many of them say it almost pontifically. There is little basis for such an attitude. Most of us find the elimination of these discharges as difficult and as unsatisfactory as any problem which we encounter in otolaryngology.

Relief can frequently be obtained by local chemotherapy. We prefer gantrisin, in the form of nose drops which contain the agent in solution rather than suspension. When it is applied in the form of a suspension, it tends to cake and act as a foreign body and to cause additional discomfort from obstruction. The medication will be useless unless it is so instilled that the solution passes over the floor of the nose onto the nasopharynx.

If the attack does not clear up promptly, and always if it is severe, persistent or recurrent, otolaryngologic consultation is necessary. At the very least an investigation of the nasal sinuses is required, and an inquiry into possible allergic factors. Sometimes treatment directed to the posterior ethmoids and sphenoids is indicated. Excessive lymphoid tissue must sometimes be removed surgically. We have been unable to duplicate in our own experience the successes reported by some otolaryngologists with x-ray. We have, however, had a limited success in controlling chronic and recurrent cases by the use of autogenous vaccines.

In all cases of nasopharyngitis accompanied by a postnasal discharge, the pa-

tient who smokes must be invited to decide whether he shall continue to smoke or be rid of his discharge. In our own experience, the two are incompatible.

SINUSITIS

The first essential in acute sinusitis is to relieve the pain and headache which are the principal symptoms and which are the result of pressure. Heat in the form of hot compresses is a simple, useful measure. So are steam inhalations. Infra red therapy may be also helpful.

As to medication, our experience is that vasoconstrictor drugs by mouth reduce congestion more promptly and more satisfactorily than topical applications by sprays or nose drops. If an allergic basis is identified or suspected, an antihistamine should be added to the vasoconstrictor drug.

Antibiotics or chemotherapeutic agents should be used in acute sinusitis only if there is a temperature elevation. Since multiple organisms are usually responsible for the infection, broad spectrum drugs are more useful than penicillin. When specific therapy is indicated, the dosage should be sufficiently large, and the duration of treatment sufficiently long, to prevent sensitization and to guard against the possible development of resistant organisms.

Empyema is an indication for prompt otolaryngologic consultation. So is recurrent sinusitis. This is frequently a disabling disease and, if it is not properly treated, it can become extremely serious.

DISEASE OF THE TONSILS AND ADENOIDS

Tonsillectomy has become a highly controversial operation. There is no doubt that formerly it was used with a complete lack of discrimination. There is also no doubt that it still has a definite place in otolaryngology and that it is as foolish to refrain from performing it when it is indicated as it is culpable to perform it when it is not.

Among the indications for tonsillectomy —all of them, it should be emphasized, valid only when other possible causes of symptoms have been ruled out—are: (1) frequent attacks of tonsillitis with fever and other systemic manifestations; (2) recurrent peritonsillar abscesses; (3) frequent infections of the ear, whether suppurative or serous; (4) persistent and recurrent cervical lymphadenopathy; (5) obstructive difficulties of speech, breathing and swallowing; (6) frequent or practically continuous head colds. Tonsillectomy is also indicated in children with rheumatic heart disease, who fail to gain weight and who suffer from malaise. It is an essential procedure in the control of diphtheria carriers. Local disease, of course, must be present before any of these general indications are justified.

I do not propose to go into the question of the possible relationship between tonsillectomy and the subsequent development of poliomyelitis other than to comment on the complete unwisdom of undertaking elective surgery in the midst of any kind of epidemic. The most obvious reason for postponing tonsillectomy, which can scarcely be conceived of as an emergency, until after the poliomyelitis season is that one has no way of knowing whether a child has been exposed to the disease before operation, or will be exposed to it, in the ordinary course of events, immediately afterward. There is a tragic lesson in the fact that, according to the lay press, the only death from poliomyelitis in the mass vaccination test just concluded occurred in a child whose course of injections had been begun late and had not been completed and who underwent tonsillectomy while they were in progress.

In the occasional case of secondary hemorrhage following removal of the tonsils and adenoids we have found the use of double strength U.S.P. posterior pituitary extract by intramuscular injection to be highly effective. Adults receive a total dosage of 15 minims given in 5 minim doses at fifteen minute intervals. Children under 6 years of age receive a total dosage of 12 minims, also given fractionally at fifteen minute intervals. Because this drug is known to decrease the blood flow in the coronary arteries it is contraindicated in patients with cardiac disease.

We have used this method to date in 174 cases. In 16 instances it was unsuccessful and bleeding had to be controlled by pack, suture, or ligation of the involved vessel. In the other 158 cases bleeding ceased promptly and permanently after intramuscular injection of the pituitrin. A technique which is more than 90 per cent effective is worth testing before more complicated methods are resorted to.

OTITIS EXTERNA

Otitis externa is a therapeutically tempting disease, if I may so express it, because it is so accessible and because treatment seems so simple, requiring little more than a dab of this or that proprietary preparation almost guaranteed to cure it. One of its risks, as a matter of fact, is the apparent simplicity of treatment. Nothing could be more specious and misleading. Treatment will not be successful, and may be damaging, if it is not based upon certain cardinal principles. They include:

1. Relief of pain, which is best accomplished, in properly selected cases, by small applications of x-ray.

2. Cleansing of the aural canal. This is a procedure, let me assure you, which is not in the least simple and which should never be undertaken by a physician without special training in the technique.

3. The local application of medication appropriate to the organisms present. These infections of the external ear, contrary to the former belief, are much more often bacterial than fungous in origin. An experienced otolaryngologist can often make the distinction by gross inspection. An inexperienced physician should not undertake treatment without laboratory identification of the bacterial or fungous cause.

Our own experience has been that preparations of hydrocortone acetate combined with neomycin are highly effective in most bacterial infections and equally ineffective as well as dangerous in fungous infections, which are markedly enhanced by their use. If the infection is of fungous origin, aspergilli, which are most frequent, usually respond well to the use of 1 per cent thymol in 50 per cent cresatin solution. Monilial infections are extremely obstinate. They are best treated by very careful cleansing of the aural canal, the local application of 3 per cent gentian violet solution, and the use of iodides by mouth, in dosages up to 90 gr. daily if the patient can tolerate that amount.

External otitis is, I am afraid, a disease in which the general practitioner who is without special training in manipulations within the aural canal and who does not have laboratory facilities for special examinations should content himself with measures to relieve pain, referring the patient to an otologist for further treatment. I make the suggestion with less hesitation because some of the most obstinate cases of otitis externa which I have encountered have been those treated in various inadequate and incorrect ways before I was consulted. This has also been the experience of other otologists in this part of the country, where, as you perhaps know, this is an extremely frequent and annoying condition.

OTITIS MEDIA

Otitis media is a disease of which I cannot speak without a certain amount of emotional indignation. My own feeling is that in dealing with it many physicians, otolaryngologists among them, have lost all sense of surgical values. Certain facts of pathology have been completely forgotten. This is a self-limited disease which, in the absence of suppuration, will go on to recovery in 80 per cent or more of all cases under the simplest measures, or no treatment at all. Antibiotic and chemotherapeutic agents are not indicated in this group of cases. Many of the results reported as brilliant evidences of their value have to do with patients who would have recovered with equal promptness and permanence if they had merely been let alone.

In cases of this kind the antibiotics usually do no harm. Once suppuration has occurred, however, the whole situation changes and they can do a great deal of

harm. When suppuration is present, the optimum conditions for the employment of these agents do not exist. The pathologic process in otitis media is, in effect, a localized abscess enclosed in a bony cage. The first requirement of antibiotic therapy, that the drug be brought into contact with the diseased tissues, therefore cannot be met. The physicians — and their name is legion — who treat suppurative otitis media by antibiotic therapy have lost sight of this criterion, as well as of the fundamental surgical principle that pus must be evacuated by surgical measures.

The dramatic improvement which frequently follows the use of antibiotics is, paradoxically, one of the dangers of this method of treatment. Physicians who point to the initial results to support their case fail to remember that it is not until later that recurrences become evident or that the disease assumes a chronic form, sometimes associated with repeated perforations of the tympanum. More serious consequences also may ensue, such as mastoiditis, meningitis, epidural or perisinal disease, lateral sinus thrombosis, or cerebral abscess. Furthermore, many a deaf child has reached that state because of the misuse of antibiotic therapy in middle ear disease.

What all of this amounts to is that the majority of cases of otitis media can perfectly well be treated by simple measures, and that in the cases which go on to exudation, myringotomy remains the useful and essential operation which it has always been.

In uncomplicated otitis media the objective of therapy is to control the upper respiratory infection, in order to secure ventilation by way of the eustachian tube. This is best accomplished with oral vasoconstrictors. If lymphoid tissue is prominent in the nasopharynx some type of nose drops may be useful. If allergy is suspected, an antihistamine may be employed. Either heat or cold may be employed to relieve pain or discomfort; neither has any therapeutic value.

Local applications to the ear should not be employed. This holds for both the old-fashioned phenol and glycerine mixtures and the more modern proprietary preparations. If pain is severe enough to suggest the need for local applications, myringotomy is usually indicated, whether the pressure is the result of suppuration or simple exudation. If the general practitioner has not been trained to perform this operation, the patient should be promptly referred to an otologist.

Only local analgesia is necessary. It is secured with some such agent as Bonaine's mixture; a cotton pledget saturated with it is placed against the tympanic membrane for fifteen minutes by the clock. The child must be under control, which is best accomplished by wrapping him in a sheet and having an assistant hold his head firmly. The otoscope is then inserted and a crescent-shaped incision is made in the posteroinferior quadrant, from below upward, to avoid injury to the ossicular chain. If the promontory (inner wall) is avoided, the incision can be made without difficulty, with little or no discomfort.

If a tip suction is available, aspiration is practised, but neither medication nor irrigation is indicated thereafter. Cotton wicks are kept in the canal and are changed frequently enough to keep the field clean.

Recurrent otitis media, chronic otitis media, and hearing impairment of any degree all require the prompt attention of the otologist.

LARYNGITIS

Laryngitis, which usually presents in the form of hoarseness, is one of the most deceptive and most insidious diseases which either general practitioner or otolaryngologist encounters in practice. It is frequently associated with an upper respiratory infection. It can frequently be explained by misuse or excessive use of the voice. It very often responds promptly to mere rest of the voice.

These considerations are all highly misleading: Hoarseness, while it may be no more than a transient and insignificant symptom, may also be the first symptom of carcinoma of the larynx. For a number

of reasons this type of cancer is, at least theoretically, readily curable. The special regional lymphatic distribution, the slowness of lymphatic drainage, and the restraining presence of the laryngeal box of hyaline cartilage all help to keep it a local disease for a considerable period of time and make it highly favorable to treatment by simple, non-mutilating measures. These advantages are all lost once the disease becomes extrinsic, as it frequently does because of delay while the initial symptom is treated with sprays, gargles, lozenges, and, of course, antibiotics, which have no place whatsoever in the treatment of a nonbacterial condition.

If hoarseness does not promptly subside, and in many cases even when it does, the patient should be referred to an otolaryngologist who is expert at mirror examination of the larynx, who can perform direct laryngoscopy, and who can also perform biopsy, which is the only sure means of making the diagnosis in questionable cases.

NOSEBLEED

Most nosebleeds are so simple and so transient that they are over long before it occurs to the patient to consult a physician. The occasional more serious variety sometimes constitutes a grave emergency and may actually endanger life.

The single most important point in management is to determine the origin of the bleeding. Therapy depends upon this information. The diagnosis should therefore begin with questioning on this point: Did the patient spit up blood first? Or did the blood come from the nose? If the patient cannot answer the question, he should be directed to sit up and lean forward. As long as he lies down, he swallows the blood. If he sits up and leans over, while he may continue to bleed, he has a better airway and the origin of the bleeding can be settled.

If bleeding is from the nose the assumption is that it is from the anterior third of the nasal cavity, generally from the septum. Bleeding of this origin can usually be checked by the insertion of a simple cotton pack and the application of digital pressure for five minutes by the clock. If desired, so-called spot packing may be employed under direct vision, or some hemostatic agent such as oxycel or a hemostatic pack (hemopack) may be used. After bleeding is under control the affected area may be cauterized with the coagulating current.

If bleeding originates in the throat, a postnasal pack may be inserted and tight spot packing employed anteriorly. Bleeding of this origin usually comes from the sphenopalatine artery, in the region of the sphenoid recess, the anterior ethmoid, high in the middle meatus, or from a branch of the pharyngeal artery, in the region of the posterior tip of the inferior turbinate. If it does not promptly cease, it may be necessary to ligate the anterior ethmoid, the sphenoid, or the internal maxillary artery. Ligation of the carotid artery or the external maxillary artery is much less satisfactory because the abundant collateral circulation permits bleeding to continue after ligation.

A patient with serious bleeding should be taken promptly to the hospital and placed under the care of an otolarygologist. Whenever nasal packing is used, an antibiotic should be administered, to guard against secondary infection. When bleeding is severe, hypotensive drugs should be used. Serpasil (reserpine) in dosages of 0.25 mg. every three hours, in addition to lowering the blood pressure, has a sedative action and increases the effect of such other sedation as is used. Patients with serious bleeding are naturally apprehensive, and measures to control their fears should be part of the plan of treatment. If blood loss has been serious, transfusions of whole blood are indicated.

DEAFNESS

The general practitioner is, of course, in no way equipped to treat deafness, but he is ideally equipped to identify deafened patients, often while it is still possible to do something constructive about their disability. The fact that this field of case-finding is so largely lost to us goes back to what was said in the beginning of this paper, that our teaching in otolaryngology

is defective. Otologists are also to blame in that they have been slow to point out how much can be achieved today in the alleviation of this handicap, by rehabilitation if not by curative therapy. It would be cruel to hold out hope of cure in a large proportion of cases. It is equally cruel not to spread the news of what can be done by rehabilitation, at all ages. The general practitioner who adds a simple question about hearing to the routine of history-taking, and who, perhaps, adds the use of a tuning fork to the routine of physical examination, will identify large numbers of deafened persons who otherwise would never reach the otologist.

PRINCIPLES OF THERAPY

At intervals throughout this paper I have commented on the unwisdom and actual danger of using antibiotic and chemotherapeutic agents in otolaryngologic conditions except on strict indications. I have also commented on the unwisdom and actual risk of the promiscuous use of nasal medications, in the form of drops, sprays and inhalers. In conclusion, I would like to emphasize the latter consideration again.

Nasal medication is seldom indicated. It is contraindicated in the treatment of the chronically congested nose. I can see, in fact, only two absolute indications for its use:

1. When a pharyngitis is present, with or without excessive lymphoid tissue. Nasal medication is then employed, with an antibiotic or a chemotherapeutic agent added in solution, not suspension.

2. When cleansing of the nasal canals is necessary in children. Nasal medication is then employed, for its mechanical, flushing effects.

The proprietary preparation which we have found least obnoxious is hydroxyamphetamine hydrobromide. We prescribe it only in small amounts, and always add a note that the prescription is not to be re-filled.

In chronic nasal obstruction a combination of vasoconstrictor and antihistamine drugs is prescribed for oral use; meantime, the underlying cause is sought for and corrected. Oral medication is more effective than local medication in shrinking the nasal mucosa and providing an adequate airway, while at the same time avoiding the irritating effects of local therapy. Our experience has been that patients with hypertension are quite as well able to tolerate a vasoconstrictor drug such as neosynephrine by mouth as intranasally.

SUMMARY

For a number of practical reasons otolaryngology forms part of the practice of the general practitioner and the family doctor. For this reason it should receive more consideration than it does in the medical curriculum. The conditions which are most often encountered in general practice are briefly discussed from the standpoint of diagnosis and therapy. Nasal medication and antibiotic therapy have a strictly limited field of usefulness in otolaryngology. It is emphasized that certain conditions, such as otitis externa, otitis media, and laryngitis, while superficially simple, may be potentially serious or may become serious under careless and ill-advised therapy. Physicians who are not prepared to employ myringotomy in otitis media or to examine the larynx definitively in apparent laryngitis should not accept the responsibility for the management of these conditions.

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DISCUSSION

Dr. Samuel Zurik (New Orleans): When Dr. McLaurin first asked if I would discuss his paper, I agreed immediately; for, in the first place, I wouldn't dare deny the Head of our Department at Tulane, and secondly, I thought that it would be a relatively simple matter with such a broad field to cover. Little did I realize that his paper was to be a postgraduate course in Otolaryngology, covering this specialty as completely as a wall to wall carpet covers a floor. Unfortunately, I am limited to only eight minutes. Because of the element of time, I have selected to discuss

further the one topic which I consider of vital importance to each of us.

Since our present day therapeutic concept for cancer of the head and neck consists of aggressive intervention at the stage when the tumor is confined to the primary focus, or to the primary site and the regional lymphatics, it behooves each of us to establish himself as a cancer detective. Early diagnosis of cancer depends to a very considerable extent upon whether the physician is suspicious, and granted that suspicion, what he does about it.

Unilateral enlargement of cervical nodes is most frequently a sign of metastatic cancer, and in many individuals, the only initial sign of head and neck carcinoma. In a group studied by Hayes Martin and Associates, 50 per cent of all patients with cancer of the nasopharynx presented involved cervical nodes as a first sign; similarly, 33 per cent of patients with tonsillar cancer, and 30 per cent of those with cancer at the base of the tongue first became aware of their disease because of enlarged cervical glands. Hayes Martin states dogmatically that, "Asymmetrical enlargement of one or more cervical lymph nodes in the adult is almost always cancerous, and usually is due to metastasis from a primary lesion in the mouth or pharynx."

When a lymph node is suspiciously enlarged in the neck, one must obtain a complete and detailed history. Unilateral ear pain, diminished hearing, tinnitus, and complaints of intermittant spontaneous bleeding from the nose or mouth, would indicate the probably presence of a lesion in the nasopharynx. Painful swallowing suggests a lesion in the oral cavity, on the tonsil, at the base of the tongue, or in the hypopharynx or cervical esophagus. If dysphagia is accompanied by dyspnea, hoarseness, or both, the larynx or pyriform fossa is probably involved. While persistent hoarseness is the chief warning of intrinsic laryngeal cancer, patients with cancer of the extrinsic larynx do not present hoarseness as a primary symptom, and may never do so. The only manifested complaints might well be dysphagia or dyspnea or both. Persistent unilateral nasal blockage with or without bleeding, despite systemic and local therapy, should indicate to the examining physician the need for further studies of the nasal accessory sinuses as the possible source of primary neoplasia.

The problem of head and neck cancer therefore centers around the suspicion of the physician who first examines the patient, that the mass in the neck is probably malignant, and that practically all such masses are metastatic in origin. Better statistical results can only be expected when this is recognized. It is well to inject at this point that, for an examination to be properly done in this area, good illumination must be obtained with either a headlight or head mirror, a working knowledge of use of the throat mirror must be available, and a willingness to utilize a probing finger for palpation within the mouth and throat. Through this systemic and careful search, approximately 90 per cent of the primary tumors can be located. At this point, it should be emphasized that a search for the primary lesion must always precede any therapeutic procedure. Premature excision of the neck mass results not only in the patient continuing to harbor the primary neoplasm, but will produce further and more distant metastasis, and will tend to make any further definitive neck surgery considerably more difficult. If the primary lesion cannot be found by thorough investigation, aspiration biopsy is the next diagnostic step. When this is positive for malignant cells, and primary lesion is found after careful search, then complete neck dissection should be carried out. Following this, the patient should be reexamined monthly in search for the primary source.

Before closing my discussion, I would state that while many primary tumors of the neck are seen, their diagnosis is more readily made, and they appear far less frequently than those of metastatic origin.

I should like to compliment Dr. McLaurin for a most informative and timely paper, and also to thank him for the privilege of entering into the discussion.

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A CENTURY OF PROGRESS IN THE CONTROL OF COMMUNICABLE DISEASES *

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In January 1854, in his opening address to the joint meeting of the Louisiana Senate and House of Representatives, Governor P. O. Hebert stated:

"The fearful epidemic [of yellow fever] which prevailed during the summer months of the past year, over a greater portion of the State, while it filled with sorrow many a once cheerful and happy home, and consigned to a premature grave thousands of our best and most useful citizens, served to develop in others and to stimulate into active exercise the highest and noblest virtues that adorn the human character.... The sanitary condition of the city of New Orleans, is no longer a question of local interest. When the meshes of railroads, which must eventually connect every part of the State with its great emporium, shall have been

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completed, the most distant villages on our frontiers will be as suburbs of New Orleans.... The fate of all is therefore involved in the fate of New Orleans—the public health of the state must depend, more or less, upon the public health of its metropolis. In view of this fact, it becomes your duty, and I am sure it will be your pleasure, to bestow your most serious attention upon such measures as you may deem most advisable and efficient to mitigate the effects, if not to prevent the recurrence of such fatal diseases as the one which swept over our State during the past summer." [1]

As a result one hundred years ago, on March 15, 1855, an act "to establish quarantine for the protection of the State" was approved by the Governor of the State of Louisiana. This law established the Louisiana State Board of Health setting the course for subsequent legislative acts which initiated the formation of the Louisiana State Department of Health. A quarter of a century later, in his Report of the Board of Health for 1882, Dr. Joseph E. Jones wrote:

"All the great sanitary and quarantine measures of the past 27 years in Louisiana, may be directly or indirectly traced to this act. During the preceding 155 years of the existence of the Colony, Province and State of Louisiana, the sanitary and quarantine efforts of the people were spasmodic, unsatisfactory and of short duration; and as a consequence, at frequent and short intervals, the people were decimated by foreign pestilence, imported by maritime men and immigrants. Up to the present moment the great principles embodied in the twenty-nine sections of this act have not been withdrawn." [2]

As can be seen from the above, one of the impelling reasons for initiating that legislation, one hundred years ago, was the fact that communicable diseases were rampant. In 1955, the year of this significant centennial, it is appropriate to review the communicable disease situation as it was in 1855, as it has decreased since then, as it is now, and to consider what yet remains to be accomplished.

One hundred years ago, the most important communicable disease in the State of Louisiana was yellow fever. The first authenticated epidemic of this disease in New Orleans, occurred in 1796, during the Spanish Regime, when Baron de Carondelet was Governor. For the following 110 years, until 1905, yellow fever prevailed endemically, claiming an average annual total of 1,000 or more lives. In the years of the great epidemics, this increased to a mortality of 3,000 in 1867, 4,000 in 1878, 5,000 in 1858, and 8,000 in the greatest epidemic of 1853.[3]

Perhaps the best way to impress the meaning of an epidemic of yellow fever on those who have never known this experience is by giving the following description of its horrors, as quoted in a paper by Dr. Rudolph Matas:

"Every door was kept closed and every window shuttered. The town looked dead. The only movement was the flutter of the myriad white funeral notices, tacked to the fences and posts and housefronts. At sunrise and sunset the booming of cannons rattled windows and great lazy pillars of black smoke, rising from tar fires in every backyard, hung over the city like streamers of mourning crêpe, pinned to the clouds. The Town Council, upon the advice of the Board of Health, had ordered this done in the hope of killing the infection.

"The cry 'Bring out yo' dead!' echoed gruesomely through the streets in the early morning as wagons made the rounds to collect the bodies of the poor who had died in the night. Wrapped only in sheets, they were dumped like refuse into the carts. Huge cotton floats, drawn by four lathered mules, bumped over the cobbles, bearing great pyramids of coffins, piled high.

"The street leading to the cemetery was just a ghastly funeral procession, black-plumed hearses followed by carriages; a man balancing a child's coffin on his shoulder, his eyes streaming tears; an old woman and a boy tugging at a child's wagon on which a cheap casket was perched; a drunken Irishman singing a bawdy song as he drove a dump cart filled with cadavers. Here was a pock-marked Negro, pushing a wheel-barrow loaded crosswise with a long pine box, and a black frocked, frightened woman with a child in her arms following on behind. All this and more, one saw.

"At the gates milled a rabble of colored people, selling sweet-meats and bellywash, some with their candies spread out on tables, others with their wares in baskets on their arms. Great green bottle-flies, so gorged they were lethargic, swarmed over the dainties of the vendors, who waved futile brushes made of gaily colored strips of paper as they called: 'Pralines! Pralines!' or 'Bel calas! Bel calas tout chauds!' or 'Bière creole! Tout frais!'

"Inside the stench was dreadful. People held handkerchiefs to their noses and the grave diggers swathed the lower half of their faces in cheesecloth soaked in camphor. Coffins were stacked in piles

of fifty under the torrid sun and flies feasted everywhere. Shallow trenches, not two feet deep, were dug in the marshy land, and the workmen stopped frequently to curse or pass a whiskey bottle down the line. Half-drunk, some of them sang obscene songs, while others kicked bones out of the way with a brutal 'Room for yo' betters, damn ye.....!' Carts dumped their loads of cadavers into the ditches like so much manure and the grave diggers pushed them around with their mattocks and kicked them into position, before spreading a thin layer of loosely heaped clods and a few shovels of lime on top.

"People of consequence were interred with little more decorum. Family slaves, up to their waists in water, dug deep graves. Frequently, when the coffins were put in, they would not sink until the slaves, holding hands to balance themselves, would stand on each end and see-saw, or a passing grave digger would say, 'I'll fix it fur ye,' as he drove the point of his pick through the cover of the casket to let out the gases. Small wonder that New Orleans was known up and down the river as the wet grave." [3]

It was yellow fever which was responsible for the appointment of the Sanitary Commission of New Orleans on the Epidemic of Yellow Fever of 1853. This Commission consisted of the Hon. A. D. Crossman, Mayor of New Orleans, and five physicians, Drs. E. H. Barton, A. F. Axson, S. D. McNeil, J. C. Simmonds, and J. L. Riddle.

The duties of the Commission were:

"1st, To inquire into the origin and mode of transmission or propagation of the late epidemic yellow fever;

2nd, To inquire into the subject of sewerage and common drains, their adaptability to the situation of our city, and their influence on health;

3rd, To inquire into the subject of quarantine, its uses and applicability here, and its influence in protecting the city from epidemic and contagious maladies; and

4th, To make a thorough examination into the sanitary conditions of the city, into all causes influencing it, in present and previous years and to suggest the requisite sanitary measures to remove or prevent them and into the causes of yellow fever in ports and other localities having intercourse with New Orleans." [4]

In 1854, by authority of the City Council of New Orleans, the Commission published its voluminous report which stated that the object of the recommendations was:

"Prevention—saving the community from the infliction of disease." * * * "For the purpose of carrying out in a full manner the views herein set forth, we earnestly recommend the project of a Health Department in a subjoined report. Such an organization we deem indispensable to the condition and character of the city; special requisites are demanded, with experience, science and skill. It should be constituted a special consultative Department, to be advised with in all cases by the city government, affecting the health of the city, and it will be seen, hereafter, they are very numerous. No enlightened city is without one, and here it is more demanded than in any other." [4]

The actual recommendations made by the Commission consisted of the following:

"1st, To adopt the system of Sewerage—the system approved of by the Sanitary Commission, as reported by our colleague, Prof. Riddell—embracing streams of running water constantly through the streets, from the river or otherwise, from March to November, during the day only.

2nd, The drainage, in the most complete manner of the neighboring swamps and levees on Lake Pontchartrain, to keep out the Lake water. This to be effected by machinery and covered drains, and these to be dug in the winter season. After this is fully effected, in the opinion of your Health Department—

3rd, The removal of the forest growth, excepting for avenues and parks.

4th, The completion of the pavage of the city (removal of the round stone) by square blocks, united by cement, and the avenues may be (temporarily) by thick planks.

5th, The purchase and extension of the Water Works to every portion of the city, with fountains in each of the public squares.

6th, An extension shed the entire front of the business part of the city.

7th, To plant trees in all the public squares and principal streets.

8th, To fill up Gormley's Basin and make a public square of it.

9th, To make covered drains of Gormley's and Melpomène's Canals and all the other drains of the city.

10th, That the slaughter houses be removed to such distance from the city, and all vacheries and livery stables having over six animals removed to squares having fifty population and ten dwellings. The same of soap and tallow chandleries, or other manufacturers or pursuits that have a tendency, in the opinion of your Health Department, to impair the purity of the city atmosphere.

11th, The adoption of a system of privies, according with the recommendations in this Report.

12th, To discontinue interments in the city limits.

13th, To prevent any but the most superficial disturbances of the soil of the city or neighborhood, from 1st May to 15th October.

14th, To establish a Health Department on the plan detailed in the next section.

15th, To establish a quarantine station, not nearer than eight miles from the city, as a branch of the Health Department.

16th, To carry out fully the system of privies as described in another section of this Report.

And finally: to order at an early day, a complete Sanitary Survey of the city before the warm weather sets in, under the instructions of the Health Department, of every house, lot and back yard in the city, to be most thorough and searching for every cause of disease, with plenary authority for that body immediately to abate it. To ascertain from every family the number that have not been vaccinated." [4]

These, then were the immediate reasons why the State Board of Health was established 100 years ago: (1) The long history of epidemic outbreaks, particularly of yellow fever; and (2) the recommendations of the Sanitary Commission of New Orleans on the Epidemic of Yellow Fever of 1853.

One of the earliest activities of the new Board of Health was to collect mortality statistics for the City of New Orleans. Those first published were for the period May 1855 to April 1856 and are to be found in the second annual report of the board to the Legislature.[5] Of the total of 9,085 deaths, 5,934, or nearly two-thirds, were caused by communicable diseases. Among the most important of these were: yellow fever, 2,670; cholera 855; tuberculosis 652; diarrhea 262; tetanus of the newborn 200; and typhoid fever 187.

Of the 9,085 deaths: 1,474 or about one-sixth were in the first year of life; 2,897 or nearly one-third were under 10 years of age; and 4,864 or over one-half were under the age of 25 when they died.

With an estimated population of 148,400, the total death rate for the city was 61.2 deaths per thousand population. This figure was 2½ times the 1855 European average of 23.8 per thousand population, and apparently the highest death rate of any of the larger cities in the United States. In 1855-1856, the citizens of New Orleans died from communicable disease alone at a rate of 40 per thousand population or a rate greater than the total death rate of any other city in the country.

This was the situation in New Orleans one hundred years ago. What, then, has happened in the century that has just been completed?

One hundred years is not a long period as far as the known history of mankind is concerned. However, this past century is remarkable because during that time a greater contribution has been made toward increasing man's longevity than in all of the previous centuries put together. One easy way of supporting this statement is to consider man's average length of life today with those at various earlier points in history. Estimates of age from skeletal remains indicate that in the early Iron and Bronze Age, some 4,000 years ago, man's total life averaged about 18 years. Studies of the age at death of several thousand Roman citizens of the early Christian Era have determined that the average length of life then was about 22 years. The Elliot Life Table for 1855 showed that life expectancy at birth in the United States 100 years ago was about 40 years.[6] At the present time in this country it is approaching 70 years. Therefore, in the last 100 years, man has gained nearly 30 years of additional life, while in the previous 40 centuries, the total increase was about 22.

The remarkable increase in longevity during the past hundred years has been in a large measure due to progress made in the control of communicable diseases. This has been brought about by scientific developments in the practice of medicine and in the field of public health.

Probably the most numerous advancements in any field in the past century are to be found in the science of bacteriology. It is remarkable that so much knowledge is available today in a science which hardly existed a hundred years ago.

Louis Pasteur, the great French chemist and bacteriologist, began his phenomenal career in 1848. His experimental work on racemic acid won for him the ribbon of the Legion of Honour. His researches on fermentation led to his recognition as the leading chemist of his day and produced practical results of far-reaching conse-

quence in such industrial processes as beer, wine, and vinegar manufacture. His efforts in investigation of the diseases of silkworms not only saved the prosperity of the French silk industry but that of all silk-producing countries. He demonstrated the natural history of anthrax and developed a successful vaccine. He prevented chicken cholera by cultivating the organism and using it for inoculation. His most interesting studies concerned rabies and the development of an attenuated virus for use as a preventive.[7]

Pasteur was not a physician, and the new science of bacteriology which he so successfully fostered was not thoroughly appreciated by the medical profession until the discovery by Robert Koch of the tubercle bacillus in 1882. This discovery ushered in what has rightly been called the golden age of bacteriology. The bacteria causing anthrax, gonorrhea, leprosy, pneumonia, and typhoid fever had already been described. Between 1882 and 1889 the causes of cerebrospinal meningitis, chancroid, cholera, diphtheria, erysipelas, glanders, Malta fever, and tetanus were discovered, and in the next decade, those of dysentery and plague.[8]

The science of bacteriology has fostered the development of protective antisera and vaccines. It has given birth to a new science, that of virology, which bids fair to equal bacteriology's own contributions to the control of communicable disease. And finally, it has played a vital role in the development of the chemotherapeutic and antibiotic agents which are so important today in the control of communicable disease.

Another field which was practically unknown a century ago was that of public health. The "Great Sanitary Awakening" of the 19th century started in 1842 when Edwin Chadwick, secretary of the British Poor Law Commission, presented to Parliament a summary volume entitled *Sanitary Conditions of the Labouring Population of Great Britain.* Its influence was so great that it led to the appointment of the General Board of Health in 1848.[9]

There is no doubt as to the role of that report in encouraging the formation of sanitary commissions in this country including the Massachusetts Sanitary Commission of 1850, under the leadership of Lemuel Shattuck, the New Orleans Sanitary Commission of 1853, mentioned above, and a citizens' association survey of New York City in 1865. These commissions and surveys were instrumental in the initiation of State and local health departments and in the founding of the American Public Health Association in 1872. For a long time thereafter such organizations were to be concerned primarily with the control of communicable diseases.

The partial purification of water probably dates back to the earliest times. It is not improbable that boiling water to purify it may have been an ancient precaution. Ages ago, everyone must have recognized the potent force of heat, and our ancestors possibly had their suspicions that dirty water caused disease and hence used heat as the most likely method of destroying impurities. As time went on sand came to be recognized as an effective filtering material, judged, no doubt, at first, by the clarified condition of the filtered product. Sand filtration, as a practicable proposition for large cities, dates back to 1829, when it was first used in London. It came to be recognized that an adequately filtered water supply was safe as regards disease. Then Koch showed why safety was secured by proving that filtration removed 98 per cent of the bacteria.[9] Since then the widespread provision of safe water supplies has brought about remarkable declines in the incidence of the water-borne diseases particularly cholera and typhoid fever, and water purification methods have been further improved by chemical and mechanical means.

Milk and food sanitation, industrial hygiene, better housing, insect and rodent control, and better disposal of human wastes all have played important parts in helping to speed the decline of communicable disease.

These are some of the important reasons why mortality and morbidity from the communicable diseases have been re-

duced. What has been the result?

At the turn of the century, New Orleans with a population of 287,104, had 8,287 deaths, or a rate of 28.9 per thousand. New Orleans still showed a considerably higher death rate than the country as a whole, although its death toll had been markedly reduced since 1855. In 1950, with a population of 570,445, New Orleans had a total death rate of 10.8 per thousand. In 1952, the latest year for which we have complete records, the total death rate for the State of Louisiana was 8.9 per thousand. For that year, there were only 15 States which had lower death rates than Louisiana, while 32 States had higher death rates.

In 1900, this country had a population of about 76,000,000 persons. It is estimated that there were 1,300,000 deaths that year of which 560,000, or over 40 per cent were caused by communicable disease. These figures represent a total death rate of 17.2 per thousand, and a death rate from communicable disease of 7.4 per thousand. In the middle of the twentieth century, with a population of 150,000,000 there were nearly a million and a half deaths in the United States with a total death rate of nearly 10 per thousand. Of these about 150,000 were from communicable disease or a rate of about 1 per thousand.

One hundred and fifty thousand deaths from communicable disease is still a formidable total. It is more than four times as great as the total of all highway accidents. One rarely reads a newspaper without seeing a story calling attention to the wasteful deaths from automobile accidents. On the other hand one hardly ever reads a newspaper article pointing out the needless deaths from communciable disease.

Today, communicable disease still kills one out of every 10 persons who die. In the older age groups, this ratio is smaller, being about 1 in every 12 deaths. However, in those under 30 years of age, these diseases account for 1 out of every 4 deaths.[10] These are preventable deaths which cost this country dearly in life and productivity.

It is important that there has been such a marked decline in the death toll from communicable disease. It is obvious that this phenomenon has led to an increase in longevity. It is equally apparent that one of the results of the declining mortality from communicable disease has been to create an "older" population in this country. This, in turn, has brought about an ever increasing recognition of the importance of the chronic and degenerative diseases.

It is almost beyond comprehension to realize that there are 5,300,000 Americans today who suffer enough from one or another of these chronic diseases to require long-term care, and that there are another 20,000,000 people who have minor or nondisabling chronic diseases or impairments requiring short-term care.[11] Yet, in our compassion for these sufferers, let us not forget that the communicable diseases still present a formidable problem.

And it must also not be forgotten that control of the communicable diseases means control of certain of the chronic diseases. In the control of heart disease, the number one cause of death today, there are not too many things which can be done specifically, once the disease has been firmly established. However, effective control of streptococcal infections bids fair to reduce the number of cases of rheumatic heart disease by preventing the occurrence and recurrence of rheumatic fever.

In spite of the efficacy of penicillin, syphilis still causes the death of several thousand persons annually. Most of these are due to the late forms of the disease, which could be prevented by effective treatment of the early stages.

Tuberculosis is still an important cause of death in this country, with preventable deaths occurring in the chronic stages which could be decreased in number by effective control of the acute infections and prevention of their spread to others.

Many of the great epidemic killers, like cholera and yellow fever, which have been eradicated from this country, need only the eternal vigilance of surveillance in

order to permit emergency control measures in case they should be re-imported. Other important diseases like diphtheria, whooping cough, and syphilis need more effective application of presently known control measures in order to make them fit candidates for total eradication. Still other diseases, and these constitute the largest class of all, require the development of control measures before we can do much about them. The common cold and infectious hepatitis are representatives of this category.

The communicable diseases most certainly have not been conquered in this country. Progress has been made, it is true, but there remains a considerable job still to be done. It is difficult to say how much time and effort will be required to accomplish the task, but it is safe to predict that it probably will not be done in our lifetime. Even when deaths from communicable disease decrease to an insignificant number, there will be a need to carry on a considerable amount of effort to prevent the occurrence of cases of communicable disease, and there will always be a demand for the surveillance of the old conquered diseases, as well as a continuing necessity to solve new disease problems as they arise.

SUMMARY

The year 1955 is the hundredth anniversary of the establishment of the Louisiana State Board of Health. One of the impelling reasons for initiating this Board was the occurrence of epidemics, particularly those of yellow fever. In the century which has passed since then, marked reduction has been made in the death toll from communicable diseases. However, they have not yet been conquered because they still cause mortality and morbidity of considerable importance.

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HISTORY OF LEPROSY IN LOUISIANA *

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Reliable evidence concerning the first appearance of leprosy among the colonists of the Southern States is lacking. The scarcity of available medical data containing the sources and dates of the early cases of leprosy in Louisiana prevents the writer from presenting the historical facts in an orderly chronological manner. Several papers have been written on this subject by well known authors; but one is struck by the lack of sound evidence to support some of the statements, which apparently are copied without verification from earlier writings, or which result from rumors and gossip having been committed to print, thus making them appear as truth. Here in Louisiana as elsewhere throughout the world, there has been an ever present and frequently successful attempt to hide individual cases from detection and recording.

The earliest description of leprosy in the South drawn from observations appear to be that given by Romans [1] wherein he states:

"A loathsome disease appears among the negroes—The leprosy, so-called, whether the same as was the cause of proscription to the unhappy

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patients under the Mosaic laws, I shall not pretend to determine. Certain it is, that it is a nauseous, loathsome and infectious disease, with the loss of beard, and hair from the eyebrows, swelling of the lobes of the ears; the face begins to shine and brown protuberances appear thereon; the lips and nose swell to monstrous size, the fingers and toes will in the end drop off and the body becomes at last—a miserable object of pity."

Romans makes reference to the occurrence of leprosy in the province as early as 1758. Gayarré [2] gives this account:

"Leprosy was then not an uncommon affection in Louisiana. Those who were attacked with this loathsome infirmity generally congregated about New Orleans where they obtained more abundant alms than in any other part of the colony."

Here is evidence that leprosy was present in this state, especially among the negroes, at a very early date. Historical records, however, are not sufficiently definite to allow one to decide where this leprosy originated. It is therefore necessary to review briefly the history of leprosy from early times, especially as it has been known in the United States.

The early history of the disease in Louisiana is confused by the fact that elephantiasis or Grecian leprosy, or syphilis and various other skin diseases often were mistaken for leprosy. Historians concede that leprosy was known to the ancient Egyptians, Indians, and Chinese. Leprosy has existed in Africa from time immemorial, especially in Egypt and Nubia.[3] It is also found on most of the African seacoasts and in many inland districts, especially in the vicinity of the great rivers Niger and Congo. It spread over the whole of Europe like an epidemic during the Middle Ages, especially about the period of the Crusades. From the 12th to the 17th century of the Christian era leprosy prevailed most extensively over much of the civilized world. A very extensive system of hospitals or lazarettos was established all over Europe and it was only about the middle of the 18th century that the disease disappeared from the North of Scotland.[4] Shortly after the disease vanished from the United Kingdom [5] and began practically to disappear from the other countries of Western Europe, it began to occur or increase in the Scandinavian Countries, particularly Norway, and for a century constituted one of the serious medical problem of Scandinavia.[6]

It is assumed that leprosy did not exist in the New World (Western Hemisphere) until after the arrival of Columbus and that it was brought by individuals who had become infected in the older European foci. Later cases were introduced from highly endemic areas in Africa through traffic in slaves. The African slave trade was actually begun in 1442 by the Portugese, fifty years before the discovery of America by Columbus. African slavery was introduced into South America and existed in Mexico, the Antilles, and West Indies long before LaSalle established the first French Colony on the shores of the Gulf of Mexico in 1684. In 1687, LaSalle was murdered and his settlement destroyed by the Indians.[7]

In 1517, Charles I of Spain authorized the introduction of African slaves from the coast of Guinea into the Island of Santo Domingo at Haiti.[8] The importation of negroes into the West Indies and America, having once begun, gradually increased to gigantic proportions. Sir John Hawkins was the first Englishman who engaged in the slave traffic, and such was the ardor with which other Englishmen followed his example that more than 300,000 slaves were exported to the New World from Africa between the years 1680 and 1700; and another 610,000 Africans were imported into Jamaica alone between 1700 and 1786. The importations by other nations, particularly the French and Portuguese, were also very large. Leprosy was brought to South America as early as 1543, and soon thereafter a leprosarium was established in Colombia. Cartagena, Colombia, became the center of the slave markets for the Spanish Main, and here in 1573, the first white man of prominence was diagnosed as having leprosy.

Leprosy established itself on the Island of Jamaica prior to 1687. Sloane, in 1687, stated that leprosy was introduced into the West Indies from Africa and southern Europe at a very early date. Towne in his *Treatise of the Diseases Most Frequent*

in the West Indies, published in London in 1726, speaks of leprosy as no rare thing to be met with among the negroes. This is further verified by Grainger[9] who in 1802 wrote: "Although the white people in the West Indies are not exempted from this dreadful calamity (leprosy) the negroes are most subject thereto."

The first settlement in the province of East and West Florida was founded in 1699 at what is now Ocean Springs, Mississippi, by Iberville, and in 1711, the present city of Mobile was founded. New Orleans was founded by Bienville in 1718. Slave traffic to these settlements was started in 1719. By 1732 the colony was crowded with over two thousand slaves who brought with them all types of pathologic conditions including leprosy. During the subsequent years, new cases continued to be imported by the close and intimate relations with the French Colonies of Santo Domingo, Haiti, Martinique, and the Spanish West Indies where leprosy had been indigenous long before its appearance in Louisiana.[10, 11]

To the south of Texas leprosy was known to exist in the early part of the 16th century. In Mexico, less than fifty years after the discovery of America, Cortez opened a hospital for sick soldiers, many of whom were reported as being afflicted with leprosy.

European countries sent or permitted individuals with leprosy to emigrate without restriction to their new possessions. Spain permitted them to go to the countries south of us; France permitted them to go to Louisiana; and Norway allowed them to emigrate to New York from whence they traveled to Illinois, Iowa, Wisconsin, Minnesota, and the Dakotas.

The earliest important Norwegian emigration to America occurred during the summer of 1825, when 52 men set sail in a 40 ton sloop from Norway. They reached New York in October 1825 and settled in the western section of the State.

The next mass emigration from Scandinavia took place in 1836, and upon reaching the United States these emigrants proceeded straight to the Fox River region in Illinois. By 1838 Scandinavian settlers were moving into Wisconsin and during the late 1840's into Iowa. By 1852, settlements were being made in Minnesota which was destined to become the State most heavily populated by them. The Norwegian settlers entered the Dakotas after 1860. By 1864 leprosy created a great deal of interest among the physicians in Minnesota when a total of 12 cases were found, 10 of whom were infected when they entered the country.

In 1869, a visiting Norwegian scientist found 18 cases in Iowa, Wisconsin, and Minnesota. Nine of these individuals admitted having the disease on their arrival in America and five others came from families who had the disease in Norway.

In 1887, Dr. Gerhard Hansen, who in 1874 discovered the acid-fast bacillus which is believed to be the cause of leprosy, wrote to the State Board of Health in Minnesota that not less than 52 from among 3,000 known cases of leprosy in Norway had emigrated to America in the hopes that in the United States the disease could be cured. When, in 1888, Hansen visited the region of the upper Mississippi Valley he found that no less than 100 individuals with leprosy had come from Norway to live in the 5 States of this area. He failed to find a single case of the disease acquired within these States.[12]

In 1899, Hansen[13] wrote: "From 1856 to 1895 some 5,000 odd cases of leprosy were reported in Norway. Of these 5,000, approximately 3,400 cases were segregated in leprosaria. Only 287 were known to have emigrated and of these only 170 to North America."

A record of the cases of leprosy has been kept in the State of Minnesota since 1888. In 1900, Bracken[14] wrote: "It does not seem that all parts of the country are favored as are Minnesota and the adjoining States where not a single American-born leper is to be found even among the descendants from a leprous parent." This claim was soon disproved when it was found that a young male of Norwegian ancestry born in Minnesota in 1870 died of leprosy in 1898. Symptoms of the dis-

ease first appeared in him in 1885. His brother, born in Minnesota in 1879, developed symptoms of leprosy about 1889. Subsequently, 6 more cases of leprosy in American-born residents of Minnesota were uncovered by the State Health Authorities. Of these 6 cases, 3 appeared in one family.

In 1906, 6 new cases were reported. By 1912 only 18 cases remained in Minnesota, and of these, 17 were in leprous families. At this time Bracken[15] stated, "We have no record of leprosy occurring outside of the family of a leper in Minnesota and we know of many cases where with a leper in the family, no other cases of leprosy appear."

Between 1912 and 1921, only 5 new cases were reported. In 1921, 3 cases were reported in Scandinavian immigrants, and 1923, 2 Finnish immigrants were reported as having leprosy. There have been no new cases of leprosy among American born in Minnesota since 1922, excluding 10 out-of-state residents reported by the Mayo Clinic. Up to 1948, a total of 108 cases of leprosy had been officially reported in Minnesota,[12] of whom 8 were American born.

On our Pacific shore, both in California and Oregon, there were many cases imported from Mexico, China, and the Philippines. Out of a total of 524 patients diagnosed in California between 1920 and June 1953, 51.5 per cent were born in Mexico, 13.3 per cent in the Philippines, and 7.5 per cent in China. Only 27 cases were considered as California-contracted cases.

It is thus evident that a large number of cases of leprosy have been imported into America during the past 235 years. Spain, at the time of her colonization of the southern portion of North America, had many cases of leprosy within the home kingdom, some of whom migrated to Mexico and the Gulf States. Her island colonies in the Spanish Main also served as distributing foci in their intimate commercial relations with our continent. This implantation still survives with considerable activity in the West Indies and the maritime countries south of us.

Portugal, too, scattered some of her cases of leprosy from her colonies over many of the Islands off the Atlantic, and our sailor population has kept up constant intercourse with these foci.

From Africa we drew a large number of cases of leprosy as a result of our importation of negroes from heavily infested areas, but with the cessation of the slave trade we were relieved from this source of danger.

France also permitted cases of leprosy to emigrate without restriction to her new possessions. Frantz[16] in his book on *Colonization of the Mississippi* writes: "Prisoners were set free in Paris in September 1719, under condition that they would marry the lowest type of woman and emigrate. They were chained and dragged to the port of embarkation." There is also considerable evidence to show that sick slaves and others may have been landed on the LaFourche and Terrebonne Bayous and Islands adjacent to Louisiana when they were refused entrance to the State by health officers. This was much easier than to return them to their place of embarkation.

It is also interesting to note that when in 1719 the notorious John Law[17] reorganized his "Western Company" to make it the "Company of the Indies", he imported 250 Germans to work his estates. Leprosy had not been entirely eradicated from Europe at that time. Thousands of other desperate Europeans, especially the war-worn peasantry of the small German states, sought to escape on John Law's ships from the eternal conflicts, the economic abuses, and the long famines of Europe. They died by the thousands in the French ports, in the crowded ships, on the sand beaches of the Gulf Coast, and in the swamps and along the banks of the Mississippi River; yet many survived and others followed them in such numbers that a German-language newspaper and a German troupe performing farces and short plays were formed. Louisiana was the first State in the union to have a genuine Liederkranz, a German

singing club. Just what part these Germans played in the importation of leprosy into Louisiana is not known.

We now come to the controversial portion of our discussion, as to whether the Acadian refugees brought leprosy from Canada to Louisiana. In 1880, Jones,[18] then President of the Board of Health of Louisiana, after considerable research regarding the existence of leprosy in New Brunswick, Canada, stated that without a doubt, at least a portion of the leprosy existing in the State could be traced to the early French settlers in Canada.

In the Acadian Story by Griffin[19] no mention is made about leprosy existing among these people prior to their deportation from Grand Pré by Governor Lawrence in 1755. The population of Nova Scotia was then well over 10,000. Of these, 6,000 were deported in 1755. Some 3,000 made their way into the country to the north, and many escaped to the woods. There were probably another 10,000 Acadians living in neighboring provinces. It is estimated that as many as 18,000 were uprooted from their homes.

The Acadians were crowded on ships, with many of the families being separated, and then were shipped to the ports of New Haven, Boston, New York, Baltimore, Philadelphia, Charleston, and Savannah. Of the twenty-odd ships consigned to New England ports, four never reached their destination. Of those destined for Philadelphia, one perished at sea with its cargo of captives, two others were driven by winds to Santo Domingo. As soon as the group assigned to Georgia arrived, Governor Reynolds decreed their banishment. With incredible courage and perseverance some reached New York and Massachusetts, but on order of pitiless Governor Lawrence, their boats were confiscated and they themselves again were thrown into captivity. Virginia also refused to permit the landing of 1500 Acadians whom Lawrence sent to the shores of that province. The Captains of the ships that carried these people were ordered to take them to England. From there many of them went to France where some remained, and others were sent to French and Spanish colonies in the West Indies. The earliest official record of Acadian arrivals in Louisiana is April 4, 1764, when 4 families numbering 20 persons arrived in New Orleans. Between January 1 and May 13 of the following year 650 Acadians arrived in New Orleans from Santo Domingo. There remained in 1765, however, 3500 families of Acadians scattered in French ports, and this number was augmented in 1766 by the return of others from Guiana. These families were finally offered asylum in central France, and finally on the Estate of M. de Peyrusse, in the section then known as Anjou. It was these Acadians who were enlisted by the Spaniards in 1782 to settle in Louisiana to join the Acadians who had already found their way there. The Spaniards also found other groups elsewhere in France and by 1784 many Acadians families were awaiting ships in the port of Nantes, to be brought to Louisiana. Many families arrived here in 1785 from their European refuges because their predecessors had found safety, religious freedom, and happiness in Louisiana. By 1790 they numbered 4,000 and by 1900 between 40,000 and 50,000.

There is no historical evidence to support the often repeated assertion that the Acadians brought leprosy from Canada to the Colony of Louisiana. Smith[20] in his report to the International Dermatological Congress stated that leprosy first developed in Cape Breton, Nova Scotia, among the immediate descendants of Scotch emigrants from the Hebrides, who arrived in Canada about 1810; and according to Page,[21] leprosy was first discovered in New Brunswick in 1815. The disease established itself to such an extent that a hospital was built in 1844 to which 32 cases were admitted. In 1849, a leprosarium was established at Tracadie. Between 1844 and 1951, a total of 319 cases were admitted to the hospital and to the leprosarium in New Brunswick.

Leprosy in Louisiana unquestionably dates to a period much earlier than 1764 when the first four Acadian families ar-

rived. There is no doubt that leprosy was introduced into Louisiana by slaves imported from Africa and by the early settlers from Spain, France, West Indies, and probably Mexico. Furthermore, it should be noted that leprosy was so prevalent by the time the first Spanish Governor of Louisiana, Antonio de Ulloa, arrived in 1766 that he attempted to prevent its spread by isolating the cases and holding them at Balize near the mouth of the Mississippi River.

When Miro became governor in 1785 one of his first measures was the establishment of a hospital for leprosy patients in the rear of New Orleans between the river and Bayou St. John. In the course of a relatively few years the number of patients gradually diminished, either as a result of their deaths or their removal from the hospital, and the disease apparently almost disappeared. The hospital was abandoned in 1807 and the neglected buildings then went to ruins.[22]

Subsequent sporadic cases attracted little public health interest until 1872 when Jones [18] noted the increasing importance of leprosy in certain parishes of Louisiana. In Vermilion Parish a woman whose father came from Southern France, began to show symptoms of leprosy about 1866. She died in 1870 leaving four sons; three of the sons developed leprosy during 1871 and 1872 at the ages of 18, 22, and 30 years respectively. There were also two daughters, one of whom was reported to have leprosy. These children all lived in Abbeville where their mother had resided. In 1875, the disease appeared in a nephew living eight miles from Abbeville. It also affected a young woman who had constantly nursed the mother during her last illness. She developed the first symptoms during 1873. A young man who frequently slept with the fourth son during the year 1875 developed leprosy in 1877.

In 1880, the State Board of Health carried out several epidemiological surveys because of an alarming increase in leprosy cases, especially on the banks of the lower LaFourche. A sufficient number of cases were found to excite earnest attention of the authorities charged with educational, sanitary, and legislative affairs of the State. Dr. Jones felt that it was the duty of the State to provide for the maintenance of the victims of leprosy and that the practice of sending leprosy cases to the already overcrowded wards of Charity Hospital should be discontinued.

In 1888, Blanc [23] reported that he had seen 42 cases of leprosy in five years of dermatological practice in New Orleans. Most of these cases were in natives of Louisiana, but their parents were mainly emigrants from Germany and Ireland. In 1892, he reported that he had seen a total of 84 cases in his practice since 1883.

In 1894, the Indian Camp Plantation at Carville was obtained as a suitable site for a home. In August 1894, the State Legislature passed the act to provide for the care and treatment of persons afflicted with leprosy. On November 30, 1894, the first contingent of leprosy patients (8 of them) were transported via coal barge at night from the "Hagan Avenue Pest House" to their new home at Carville. For a time the existence of the home was threatened by the inhabitants of Iberville parish but a rational judgement supplanted an early misguided prejudice.

About a year after the opening of the home, the Board of Leprosy Control realized that the patients were not receiving sufficient attention and requested the Sisters of Charity to care for them. Four Sisters volunteered their services and came to Carville to stay with the patients. The Sisters took up residence in the Old Colonial Home of the abandoned plantation, while the patients were housed in the old slave cabins.

In 1900, the State Legislature appropriated a sum of money sufficient to purchase a site and build a leprosarium nearer New Orleans so as to make it more convenient for administrative purposes. Such a site was selected in Jefferson Parish. However misguided residents of the area who strongly opposed the transfer of patients to this home, burned the buildings. The site was sub-

sequently abandoned. The Louisiana leprosy home at Carville continued to serve the state until January 3, 1921. At that time the Federal Government purchased the institution and assumed its custody. As a unit of the U. S. Public Health Service Hospital system, it became the National Leprosarium.[24]

It is noteworthy to relate that, in 1904, Dyer reported that formerly only the parishes of Orleans, LaFourche, and St. Martinsville were known centers of leprosy infection, but by 1897 there were 20 parishes situated mainly in the southern half of the State which had developed cases of leprosy. By 1935, an additional 12 parishes were added.

Since the establishment of the National Leprosarium at Carville in 1921, patients have been admitted from 39 of the 48 states and from the District of Columbia. A majority of the patients (80.2 per cent) came from the States of California, Texas, Louisiana, and New York, and of these 43.5 per cent were of foreign birth. A total of 661 patients from Louisiana alone were treated in the hospital at Carville from November 30, 1894, to January 1, 1955. These, together with 33 cases not treated at the hospital, make 691 known cases of leprosy in Louisiana since November 30, 1894.[25]

SUMMARY

From the above discussion it is evident that the early cases of leprosy in America came principally from Africa and Europe, and later from Asia. The majority of the imported cases in the Gulf States entered from Africa, the West Indies, and Mexico; in the Upper Mississippi Valley from the Scandinavian Countries; in the West Coast States, from Mexico, Asia, and the Islands of the Pacific; and, in the Atlantic Coast States, from Europe, Africa, and the West Indies. With the exception of Florida, Louisiana, and Texas, the three Gulf States, which are generally described as endemic states, the majority of the leprosy cases in America have occurred in foreign-born individuals.[26]

There is no civilized country which does not have its quota of imported cases, but with rare exceptions the disease shows no tendency to spread. This relative immunity of certain parts of the world is well exemplified in the United States where there have long been two main foci of the disease; one in the Upper Mississippi Valley, chiefly in Minnesota; the other in the Gulf States of Louisiana, Florida, and Texas. Here we see one outstanding difference since in the former, the disease shows a tendency to extinguishment, while in the latter, new cases are found frequently in the native-born individual.

In Europe the disease has practically disappeared from Norway but it remains prevalent in Africa where it is widespread. In Asia, also the disease is very prevalent. There India leads with more than an estimated million cases, Japan has 40,000 cases, and China has untold hundred of thousands of untreated cases. In South America the disease is still very prevalent, with an estimated 100,000 cases in Brazil, 30,000 cases in Colombia, and probably 12,000 cases in Argentina.

The reason that leprosy has not spread through the Upper Mississippi Valley is to this day not clear. We still do not know the exact nature of the complex transmission of leprosy, a problem that can be solved only by much more intensive research.

Isolation has always been considered one of the most important factors in the decline of leprosy in Europe and elsewhere, but isolation in the strictest sense was never practiced in the North Central States. Normal family relations were maintained, and in no account is there a record of one marriage partner transmitting the disease to the other.

Some authors have suggested a vector as a transmitting agent and therefore Minnesota's climate with its severe winters and hot summers may in some way be unfavorable to such a vector. We can not be assured, however, that leprosy does not spread in the colder northern climate. Leprosy is believed to be a communicable disease and, therefore, we must admit that when all of the factors necessary for its transmission are present new cases will

develop regardless of race, color, climate, or country. Hansen[13] and Gronvold[27] believed strongly that the improved hygiene of the Norwegian settler was paramount in the defeat of leprosy in this area.

The mysterious spontaneous disappearance of leprosy from Western Europe during the 14th, 15th, and 16th Centuries and from the North Central States during the decades of the 19th Century gives us hope that progress in attaining knowledge of this disease will alleviate the fate of many native Louisianians. Such knowledge will throw a new light on the fascinating riddles of the past and relieve the sufferings of some 4,000,000 to 5,000,000 patients of South America, Asia, Africa, West Indies, and the Islands of the Pacific.

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THE INFLUENCE OF RESPIRATORY INFECTION ON CARDIAC DISEASE*

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SHREVEPORT

It has been clinically recognized that respiratory infections such as colds, bronchitis, and influenza, although often minor in their own manifestations, precipitate congestive heart failure in persons suffering from heart disease. The comparatively minor course of the respiratory infection bears little relationship to the severity of the precipitated congestive failure. A great deal of the mortality following respiratory infections is among persons with heart disease. Conversely, it might be said that much of congestive failure is directly attributable to preceding acute respiratory infections.

It is not within the scope of this paper to discuss heart failure of primary pulmonary origin or cor pulmonale. Excluded from this paper are chronic type emphysema, fibroid lung, pneumonoconiosis, vascular disorders of the lungs and kyphoscoliosis.[1] In this group it is immediately recognizable that acute respiratory infection superimposed on the pre-existing pulmonary disease precipitates a very high percentage of congestive heart failure.[2] An attempt will be made to correlate the frequency of congestive failure in persons with primary heart disease either known or unknown previous to onset of congestive failure. The variability of symptoms associated with respiratory infections complicates the selection of cases for a review such as this. To be included in the group under consideration it was required

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that there be a definite history of three or more of the symptoms usually associated with acute respiratory infection. These included coryza, sore throat, fever, chilliness, headache, and gastrointestinal symptoms.

The following tables represent a breakdown of 75 cases of congestive failure admitted to the Willis Knighton Memorial Hospital during the past eighteen months. For the purpose of this study only primary admissions are used.

Table 1 represents a breakdown of these cases according to etiology, sex, and age grouping.

Ninety-seven per cent of these cases were either hypertensive or arteriosclerotic and were about evenly divided between the two. The number of deaths in each group was identical.

Table 2 shows cases with pre-admission histories of respiratory infections. These cases are also broken down into sex and age groupings.

Table 3 represents the deaths among these patients. The fact that none of these cases represented re-admission should be kept in mind when evaluating these statistics.

From this analysis it is found 28 or 37.3 per cent of 75 cases of congestive failure were immediately preceded by respiratory infections. Flint[3] in reporting an analysis of 300 cases reported 156 or 52 per cent were preceded by respiratory infections. It is also apparent from the deaths in this group that those patients who developed cardiac failure without apparent precipitating cause had a higher mortality than those attributed to respiratory infections. The widespread early use of antibiotics probably plays a big part in lowering this mortality.

Two approaches to the problem of prevention of this group of cardiac failure patients becomes evident. First is the possible prevention of respiratory tract infections; however, as this so frequently has an onset as the "common cold" such is not possible insofar as any specificity is concerned. The second approach is to try to gain an understanding of the mechanisms by which such infections produce an added burden on the circulation.

Changes in salt and water metabolism, disturbed osmotic pressure and apparent increase in plasma volume which may occur in pneumococcal pneumonia have been

TABLE 1

Etiology	Sex		Age Groups				Total
	Male	Female	0-25	25-50	50-70	70-Over	
Arteriosclerotic	L. 21	10		4	16	13	31
	D. 2	2			2	2	4
Hypertensive	L. 16	14		2	18	10	30
	D. 3	1			3	1	4
Rheumatic	L.	3		1	2		3
	D. 2				1	1	2
Congenital	L. 1		1				1
						Total	75

TABLE 2
PRE-ADMISSION HISTORY

	Male	Female	Age				Total	%
			0-25	25-50	50-70	70-Over		
Respiratory Infection	15	13		2	12	14	28	37.3
No Respiratory Infection	31	16	1	3	29	14	47	62.7

TABLE 3
DEATHS ACCORDING TO AGE

	Under 70	Over 70	Total
Respiratory Infection	1	1	2
No Respiratory Infection	5	3	8

considered as possibilities in less severe respiratory infections. Studies by Kowalski, Rutstein and Reynolds on 17 healthy medical students with acute upper respiratory infections were along these lines. Their observations failed to reveal changes in levels of erythrocytes, hematocrit, hemoglobin, serum electrolytes, urine, Evans blue space, thiocyanate space and body weight. They concluded that their findings showed no changes which might lead to an explanation of the occurrence of congestive failure.[4] The question as to whether changes occurring in healthy young adults would be the same as a person suffering with cardiac pathology immediately becomes apparent.

Whether the factor precipitating cardiac failure is one simply of increased work on an overburdened heart as a result of general metabolic changes occurring in respiratory infections such as elevation of temperature, increased respiratory effort or rate, effects of toxins on the myocardium, or whether failure results from chemical changes within the circulation or cardiorespiratory system remains to be proved. Further studies in the line of etiological factors are certain to be forthcoming.

CASE REPORTS

The following 3 cases are shown to illustrate three different patterns. The first, an onset of failure in a known hypertensive with no previous cardiac distress. Second a case of congestive failure in a known case of arteriosclerotic heart disease. The last demonstrates the insidious onset of congestive failure during the course of a respiratory infection.

Case No. 1. This 61 year old white male has been followed as an out patient since 1952, at which time he was found to have a blood pressure of 230/110 during a routine physical examination. At that time electrocardiographic and x-ray studies were within normal limits. During the next three years his blood pressure ranged from 150/90 to 170/90 and he was symptom free.

February 4, 1955 he was seen in the office complaining of a cold manifested by sneezing, cough, and slight elevation of temperature for two days. Physical examination revealed the following pertinent findings: Temperature elevation to 101°, blood pressure 160/90, respiration 18, pulse 82. Heart and lung examination was negative. Electrocardiographic tracing was essentially the same as previously and within normal limits. He was advised to enter the hospital but refused and was given antibiotic in the form of penicillin and tetracyline and told to stay in bed and report by phone daily.

The patient did not report until three days later when he sought admission to the hospital because of weakness and pain in his left chest. He stated that he had continued at his work in spite of daily elevation of temperature to 101° since his last visit to the office.

Examination revealed an acutely ill male complaining of left chest pain. Temperature 98, respiration 22, pulse 102, blood pressure 148/76. Heart enlarged to left with irregular rhythm, no murmurs were noted by the examiner. Lungs—moist rales in both bases with increase in breath sounds over the left lower chest anteriorly. Electrocardiograph tracing revealed absolute arrhythmia with absence of P waves: Interpreted as consistent with auricular fibrillation. X-ray revealed some increase in the size of the heart since previous examination of June 4, 1954, (with enlargement of thoracic aorta). There were increased markings in both lower lung fields consistent with passive vascular congestion and a fairly well defined homogeneous density in the mid-lung field at the level of the third anterior rib which was consistent with an area of pneumonitis.

On the night of admission the patient's temperature was elevated to 102° and his condition was considered as critical. Therapy consisting of tetracyline, digitalis, and supportive nasal oxygen was followed by steady improvement and he was discharged from the hospital on the fifteenth day.

This case serves to illustrate the onset of failure during a respiratory infection not considered by the patient severe enough to necessitate following medical advice. There is no doubt that failure to heed advice played a part in the ultimate severity of this case.

Case No. 2 This 56 year old white male was referred for study January 1954 because of elevation of blood pressure found on routine physical examination. Prior to this time he had been normatensive insofar as he knew.

Examination revealed an obese white male, blood pressure 180/110. General physical examination essentially normal. Electrocardiogram revealed flattened T_1, and T_3, with deep Q_3 and interpreted

as suggestive myocardial ischemia and coronary sclerosis. X-ray of chest negative. Blood cholesterol 237 mgms. per cent.

He remained symptom free and blood pressure remained within normal limits during the next twelve months. January 1, 1955, he entered the hospital with a complaint of severe substernal pain radiating through to back. Serial electrocardiograms revealed flattened T_1, T_2, T_3, Tv_4, Tv_5, and Tv_6, in keeping with myocardial ischemia secondary to coronary insufficiency. He remained in the hospital three weeks after which time he was discharged home. Three weeks later he developed an acute respiratory infection with an onset of chill and elevation of temperature to 101°. He improved on bed rest, tetracycline and symptomatic therapy for three days. On the fourth day he suddenly became dyspneic and very weak. On admission to the hospital examination revealed an anxious, acutely ill male. Blood pressure 130/90, temperature 101°, and respiration 24, pulse 100. There were moist rales in both lung bases that cleared slightly after coughing. Heart rate 100 per minute, regular with no murmurs, heart enlarged to percussion in all diameters. Electrocardiogram revealed sinus tachycardia (low QRS amplitude) flattened T_1 and T_2. Evidence of myocardial ischemia. Dyspnea and heart size decreased on regime of bed rest, nasal oxygen, and digitalization.

The patient was discharged after three weeks hospitalization and has been symptom free since that date. This case clearly illustrates the onset of cardiac failure in a patient following respiratory infection in spite of early and adequate treatment for his respiratory infection.

Case No. 3 is used to illustrate the onset of failure eleven days after respiratory infection. This case demonstrates how the patient with no previous knowledge of cardiac pathology might easily misinterpret the symptoms of congestive failure as a continuation or exacerbation of a recent respiratory infection. Such cases may result in disaster to the patient in waiting too late to seek necessary advice. This also presents one of the obvious pitfalls in attempting to prescribe for patients with apparently simple respiratory infections by phone without the benefit of a complete physical examination.

Case No. 3. This was a 64 year old male seen first in the office with a history of head cold eleven days before, associated with rather severe sore throat and elevation of temperature not above 100°. After three days rest at home he returned to his job as shipping clerk. His cold apparently continued to improve until three days before when he developed a nonproductive cough. This was followed in two days by nocturnal dyspnea and for this reason he decided to seek medical advice. The past history was negative for cardiovascular disease of any type. Examination revealed blood pressure 180/110. Heart enlarged to percussion, gallop rhythm with no murmurs noted. Lungs revealed rales at both bases. No pedal edema noted.

Electrocardiogram showed inverted T_1, T_2, T_3, Tv_4, Tv_5, and Tv_6, left axis deviation. Tracing interpreted as evidence of myocardial disease in keeping with hypertensive heart disease. X-ray of chest showed cardiac enlargement with congestive changes bilaterally. This patient responded well to digitalization, bed rest, and low salt intake.

SUMMARY

In summary, it is evident that in a fairly large percentage of cases of congestive failure respiratory infections serve as the precipitating cause. It is therefore evident that all respiratory infections in patients with known cardiac damage should be considered as potentially dangerous and treated early and vigorously, if possible. Further, in all cases of congestive failure the possibility of an underlying respiratory infection must be suspected and sought for. Because of the fact that the evidences of respiratory infection may be masked by the symptoms and signs of myocardial failure, one must not accept the obvious, and should proceed with a careful search for an underlying precipitating factor of infectious type. The appropriate therapy directed at the underlying respiratory infection if present, instituted early, is most important in the treatment of congestive failure. Recognition of respiratory infections as a precipitating cause rather than a terminal event in congestive failure may materially lower the mortality in failure especially during the winter season.

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TREATMENT OF ALLERGIC EMERGENCIES *

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SHREVEPORT

Allergic emergencies are relatively rare considering the high incidence of allergic diseases, but there is no doubt that they are increasing as a result of drug reactions; especially those following the injection of penicillin and other injectable antibiotics. Every physician should be familiar with the management of these cases because prompt treatment can be the determining factor between life or a fatality. Despite the addition of many new drugs to the available armamentarium, the mortality rate from these emergencies is increasing alarmingly. A critical evaluation of the present methods of treatment is clearly indicated.

The following conditions will be considered: status asthmaticus, angio-edema and urticaria, serum sickness, anaphylactoid reactions and contact dermatitis.

STATUS ASTHMATICUS

Status asthmaticus is a severe asthma which persists for twenty-four hours or longer and is not relieved by epinephrine or similar drugs.[1] The causes of an attack of this type are numerous and do not come within the scope of this paper. Since epinephrine does not afford relief, spasm of bronchial musculature is not an important feature. The pathologic changes to be considered are edema of bronchial mucous membrane, bronchial or bronchiolar mucous plugs and dehydration.

Treatment: Someone facetiously remarked, "Asthmatics seldom die without the aid of a physician." This exaggerated statement should be a warning not to overtreat.

Treatment should be symptomatic as well as specific. During the state of emergency, elimination of known or suspected causes of the attack should be carried out. Other specific measures must of necessity be postponed until the acute symptoms have subsided; consequently, they will not be discussed.

Symptomatic Treatment should be directed along the following lines:

1. *Reassurance, Rest* and *Sedation:* Every patient in status asthmaticus is apprehensive and fatigued, which is often made worse by the excitement of family and friends. Reassurance, calmness and deliberate action on the part of the physician usually have a beneficial effect. This alone may suffice to break the vicious cycle and little or no other treatment may be needed. In many instances, additional measures will be needed and it is best to hospitalize the patient. This removes the patient from environmental factors, which may be extremely important, and at the same time affords the physician an opportunity to carry out necessary procedures without excitement. Little things are important. Even the proper adjustment of the hospital bed may contribute much to the comfort of the patient.

Mild Sedation is usually beneficial. Barbiturates are excellent if one is positive that sensitivity does not exist. If in doubt, chloral hydrate is the drug of choice since sensitivity to it is extremely rare. Aspirin is very beneficial. It not only allays pain and discomfort but relieves edema. If the patient is sensitive to aspirin and related drugs, amidopyrine should be substituted. Drugs which suppress cough and cause drying of the bronchial mucous membrane should not be used. This includes all narcotics as well as demerol. It is well known that these drugs have contributed greatly to the increased mortality rate from asthma.

2. *Fluids, Water-electrolyte Balance, Nutrition* and *Diuresis:* Every asthmatic soon learns that the intake of food or water causes an increase in dyspnea; consequently, if the attack has been long the paradox of general dehydration with bronchial edema exists. Most of the symptoms are caused by bronchial edema and mucus plugs. Dehydration causes mucus plugs to become more tenacious. It is evident that both conditions must be treated. At the same time nourishment should be

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furnished. It is estimated that a patient in severe asthma will lose 2500 cc. of fluid per twenty-four hours in the form of sweat, water vapor, and urine[1]. To replace this loss, 1000 cc. of fluid should be given intravenously every eight hours until the patient is able to take fluid orally. At the same time edema must be combated. Edema is not a problem of water. It is a problem of salt and, more specifically, sodium.[2] During the acute attack a patient in status loses large quantities of salt through sweating. He takes very little or no salt by mouth. Most writers recommend 5 per cent dextrose in distilled water for the treatment of status asthmaticus.[1, 3-5] I believe that this is a mistake. In my opinion, 10 per cent dextrose should be used to restore acid-base equilibrium, to restore glycogen in liver and to stimulate diuresis. Unless the patient is taking cortisone or ACTH, it should be given in physiological saline. This replaces salt previously lost and prevents salt dilution from the additional fluid being given. Aminophylline, 0.25 (3¾ grains), should be added to the infusion. I seldom use 0.5 gram (7½ grains) as it frequently causes great discomfort. The action of aminophylline is debatable. Apparently it is a diuretic and is very efficient in relieving bronchial edema. In addition to these diuretics, I usually give acetazoleamide (diamox), 250 mg., daily. Before this drug was available, I did not hesitate to give mercurial diuretics. As soon as the patient is able, foods and liquids are given orally. The foods should be soft and those that are known to be tolerated well by the patient. Liquids should not be iced.

3. *Oxygenation of Blood—Removal of Mucus Plugs:* Oxygen should be used if the patient is cyanotic. It is best given by nasal catheter rather than by oxygen tent. The oxygen tent often gives the patient the sensation of being shut in. When oxygen is given it should be humidified and at room temperature. The concentration should be about 30 per cent and should not exceed 40 per cent. As you know, oxygen in strong concentration may cause the patient to go into a coma due to carbon dioxide retention in tissues.[1, 4] Respiration may be depressed for the same reason. Oxygen in strong concentration may also cause the removal of nitrogen from the paranasal sinuses and middle ears producing a vacuum type of pain. It may cause tracheal and bronchial irritation.

Oxygenation of blood is best accomplished by relieving edema, which has been discussed, and by removal of mucus plugs. Supplying adequate fluids facilitates the removal of mucus plugs. This can be enhanced by the use of iodides. The iodide ion is excreted by the bronchial mucosa which is accompanied by a weeping or bronchorrhea. This causes the plugs to be less tenacious, allowing them to be coughed up. I prefer to give potassium iodide in doses of 20 drops to a teaspoonful of saturated solution in water three times daily, but syrup of hydriodic acid or sodium iodide may be used.

4. *Other Measures:* By definition, status asthmaticus is not relieved by epinephrine and similar drugs. This is not because the patient is "epinephrine-fast" but it is due to the fact that bronchiolar spasm is not an important feature of the case. Later in the course of treatment epinephrine may be very useful. I believe the maximum dose should not exceed 0.2 cc. of 1:1000 dilution. It may be repeated often, but when the patient has blanching about the mouth, a coarse tremor of hands, or both, full therapeutic effects are being obtained and additional epinephrine will only add to the discomfort of the patient.

Isopropylarteronal (isuprel, isonorin, aludrine) by aerosol is said to be effective in some cases even though epinephrine does not afford relief. My experience with this drug has been limited and the results not encouraging. Certainly, infection should be treated as soon as it is recognized but antibiotics should not be given unless there is a definite indication.

ACTH and cortisone are seldom needed in the treatment of status asthmaticus. Both are dangerous drugs and should not be used promiscuously. In rare instances they may be indicated. ACTH is the drug

of choice. It acts more quickly than cortisone. However, it should be remembered that ACTH may produce anaphylactic shock or urticaria and angio-edema. It has other undesirable effects and should be discontinued as soon as possible. Cortisone, even in small doses, may produce adrenal atrophy. These symptoms usually subside in about three weeks but at times they may become alarming and may persist for a much longer period of time. Adrenal cortical atrophy causes one to stand stress poorly which is bad for an asthmatic.

5. *Common Procedures Which Should Be Avoided:* Antihistamines are contraindicated because of the drying effect on the bronchial mucous membrane which causes mucus plugs to become more tenacious.

Ether and oil by rectum is advocated by many, however, the patient has difficulty in retaining it. The amount which will be absorbed is uncertain and there is always danger of producing a severe burn. After extensive trial in my own practice several years ago, I was impressed by the fact that it frequently did more harm than good.

Aminophylline, orally or by rectum, should not be used in the treatment of status. The rate of absorption and the amount of absorption are too indefinite. However, aminophylline by rectum may be very useful in preventing nocturnal attacks of asthma.

Bronchoscopic removal of mucus plugs is seldom necessary if the procedures outlined above are followed. If removal of mucus plugs is done in this manner the results are usually disappointing.

Fever production with piromen, typhoid bacilli and other forms of foreign protein is of little or no value and there is danger of producing a severe reaction in an acutely ill subject.

The intravenous administration of procaine, alcohol, and epinephrine is too dangerous to warrant discussion.

Thorazine is being given extensively to allay nervousness in patients with status asthmaticus and other forms of allergy. In view of the fact that it may produce shock, jaundice, fever, grippe-like symptoms, and dermatitis, its use for cases of this type seems to be premature and is to be deplored.

Oxygen and helium increase cost to the patient and are not superior to oxygen alone.

ANGIO-EDEMA AND URTICARIA

Angio-edema and urticaria are considered together since the pathogenesis is the same. Angio-edema occurs in deep tissues; whereas, urticaria occurs in the outer layers of the cutis. The two conditions may occur together or they may occur separately. The causes of these conditions are varied. They are true allergic phenomena. Nervousness and emotional stress may be contributing factors but not the cause. The most common causes are: foods, drugs, infections, intestinal parasites, trichinosis, malaria, and occasionally inhalants, contactants, and physical agents. It is not within the scope of this paper to go into detail concerning the determination of etiological factor nor, is it within the scope of this paper, to discuss mild cases. We are concerned with the relief of severe attacks which may be of short duration or of long duration.

The first problem is to relieve edema, itching, burning, and pain. Epinephrine (1:1000) is the drug of choice. It should be given subcutaneously in small doses, usually not more than 0.2 cc. It may be repeated often. Blanching about the mouth or a coarse tremor indicates full therapeutic effect and the drug should not be repeated until these symptoms subside. Ephedrine and ephedrine-like drugs may be beneficial and may prolong the effects of epinephrine. If the case is of short duration the antihistamines may be beneficial since they frequently relieve subjective symptoms and may relieve edema. If the case has persisted for several hours or more it is my experience that antihistamines are almost valueless.

As soon as epinephrine has been given, 1000 cc. of 10 per cent dextrose in physiological saline is given slowly, intravenously. Aminophylline, 0.25 gram (3¾ grains),

should be added because of its effect on edema. This is repeated every eight hours. Cold starch or aveeno packs are applied to the body. As soon as the infusion is completed, a cool starch or aveeno bath may be more beneficial than packs. If tolerated, aspirin is given at frequent intervals. Amidopyrine should be substituted if the patient cannot tolerate aspirin. Barbiturates should be given if tolerated; if not, chloral hydrate should be given. Within a relatively short time a saline laxative is administered. Acetazoleamide (diamox), 250 mg., should be given.

Food and drugs to which the patient is known to be sensitive should be avoided. A soft diet is given and the patient is encouraged to eat sweets.

ACTH and cortisone have been used extensively during the past few years. ACTH is the drug of choice, although occasionally it increases symptoms. As previously mentioned, both drugs are potentially dangerous and should be used only after due consideration.

Procaine administered intravenously is quite effective in relieving urticaria and angio-edema but it is dangerous. It may cause a sudden vasomotor collapse and death.

The sodium salt of dehydrocholic acid (decholin sodium) has been recommended for the treatment of urticaria, angio-edema and serum sickness. It is given orally and intravenously. I have given the oral preparation to patients with mild urticaria and have not observed beneficial effects. I have not given the drug intravenously to urticarial patients because in using it for circulation time I found it not unusual to get a severe constitutional reaction.

SERUM SICKNESS

The treatment of serum sickness is the same as that outlined for urticaria and angio-edema. It is mentioned separately because of its frequent occurrence following penicillin injections. It may appear after the first dose of a drug. It is thought that antibodies, formed soon after the drug is injected, unite with some of the drug remaining in the tissues.[6] A previous sensitizing dose is not needed; consequently, skin testing is of no value in predicting which person will develop serum sickness.

ANAPHYLACTOID REACTIONS

Severe systemic reactions to drugs or allergenic extracts occur within a few minutes after administration. For this reason the cause is usually known. Such a reaction may occur following the injection of most any drug and it sometimes occurs following the oral administration of a drug. Penicillin and allergenic extracts account for the majority of severe reactions.[3] The reactions can be prevented. A skin test can be done with penicillin, using 10 units of penicillin per cc.[7] because antibodies are in the blood from a previous sensitizing dose. Care in the dosage and administration of allergenic extracts will prevent reactions from this source.

Treatment should be carried out immediately but without excitement. If the drug was injected into an extremity, apply a tourniquet above site of injection. Inject 0.2 cc. of epinephrine (1:1000) in opposite arm. Inject 0.2 cc. at site of injection of drug to cause vasoconstriction and delayed absorption of drug. Repeat the injection of epinephrine every twenty minutes if necessary for relief. An antihistamine should be given intravenously. Benadryl in doses of 60 to 100 mg. is very effective or decapryn in doses of 20 to 60 mg. This should be followed in a short time by aminophylline, intravenously, 0.25 gram, given slowly. Patients who go into shock and become cyanotic should be given oxygen. They should have intravenous fluids such as dextrose, blood or plasma.

CONTACT DERMATITIS

Contact dermatitis is not often an emergency but when it does become acute it can be very troublesome and the patient can be very uncomfortable. Treatment consists of cool baths, intravenous dextrose in physiological saline, antihistamines, aspirin, barbiturates and sometimes ACTH or cortisone.

SUMMARY

A conservative plan of treatment for status asthmaticus, angio-edema and urticaria, serum sickness, anaphylactoid reactions and contact dermatitis has been outlined. It has been suggested that 10 per cent dextrose in physiological saline be used in the treatment of these conditions rather than 5 per cent dextrose in distilled water which is in common usage. The reasons for this change are discussed.

Objectionable methods of treatment in common usage are mentioned.

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RIDLEY LENS IMPLANT; CASE REPORT *

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MONROE

In March 1952, Harold Ridley's report of 27 cases in which he re-placed the cataractous lens with an acrylic plastic lens, stirred the imagination of all ophthalmologists who had ever performed a simple cataract extraction. Here was the answer to the enlarged image that so regularly disappointed the aphakic patient despite perfect vision as a consequence of a flawless technique. The operator may have attempted to explain this phenomenon prior to surgery but the obvious disappointment and period of adjustment was usually necessary, nonetheless. This new operation offered a possible way to achieve binocular vision through a lack of aniseikonia. The heavy lenses and the decreased field of useful vision would be unknown.

With this in mind the following case was carefully selected and the permission to do a somewhat experimental procedure was obtained:

CASE REPORT

E. Z. M. colored female age 75 years, was first seen April 30, 1953, and gave a history of gradual decrease of vision for the previous two years. There had been no pain, no redness of the eyes and no history of injury or chronic systemic disease. She denied any symptoms such as chronic cough, allergy, or bleeding tendency. Her family physician reported her blood pressure to be 110/70, and heart and lungs were normal. No abnormal findings were reported from the examination of blood which included serology, and urine.

Vision at this date was, right eye: light perception only with good light projection and red-green vision; left eye 20/100 and Jaeger 14 at 6 inches. Corrective lenses added little except to give better near vision. Slit-lamp examination showed the right lens to have a completely mature cataract and the left lens to be immature. The intra-ocular tension was 16 mm. mercury in both eyes by the Schiotz tonometer.

By October 13, 1953, the vision in the left eye had dropped to 20/200. Operation on the right eye was advised and scheduled for October 22, 1953. Conjunctival cultures were negative but the patient was given an antibiotic ointment to be used in the right eye three times a day for one week prior to surgery.

A standard extra-capsular linear extraction was done, except for a careful removal of as much of the anterior portion of the capsule as possible, followed by irrigation. Peripheral iridectomy and pre-placed black silk continuous corneal-scleral sutures were used. The acrylic lens, sterilized in zepheran solution and rinsed in saline, was introduced by forceps and teased into position with an iris repositor. Eserin and aureomycin ointments were used in the dressing.

There was no complaint of excessive pain so atropine was not used until November 4, 1953, when the sutures were removed. At this time evidence of an iritis plus pigment and cellular deposits on the acrylic lens was noted. The cornea was clear and only mild flare was present. Cortisone suspension was added to this medication in the form of drops.

On December 16, 1953, the pupil was so nearly occluded that it was necessary to introduce a Zeigler knife and actually "scrape" the plastic surface and separate a few posterior synechiae. Cortisone and atropine were continued and the pupillary area remained relatively clear.

January 6, 1954: Best vision obtained with a

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 4, 1955.

minus 4.00 diopter cylinder axis 115, was 20/50.

May 5, 1954: The eye was quiet though pigment deposits remained on the lens and a few keratitic percipitates appeared on the corneal epithelium. With a plus 1.00 sphere combined with a minus 3.50 cylinder axis 110, vision was 20/30 plus.

DISCUSSION

Obviously, this is not the safest procedure in cataract surgery. The patient was senile and would have had some reaction with this type of extra-capsular removal, but this was certainly a combination of lens material and foreign body reaction. The unusual amount and axis of the astigmatism may have been due, in part, to a tilting of the plastic lens, although it appeared perfectly placed by microscopic examination. The patient is happy with the present acuity and has never complained of distortion or magnification of objects.

Ridley, reporting 60 cases before the Academy, in Chicago, October 1952, stated that 50 per cent of his patients had 20/30 or better vision. This does compare favorably with other and much larger series of the old extra-capsular operations. Five of Ridley's cases have had a difference in refraction of 4 diopters or more, proving that aniseikonia was not always eliminated.

Subluxation of the plastic lens was not listed as a complication, although it may conceivably be one. One writer, through fear of this, has devised a stainless steel wire attachment to be left imbedded in the cornealscleral wound.

It may well be that in the future a more innocuous plastic material may be developed and a more accurate method of placement of the lens may be found, but until that time the Ridley operation should be reserved for the selected case who must undertake a great risk to gain a very small advantage. This advantage is further reduced by the lower average visual acuity obtained.

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1. Ridley, H.: Intraocular acrylic lenses: A recent development in the surgery of cataract, British J. Ophthal., 36:113, 1952.

2. Roeth, A., Sr.: Ridley's cataract operation, Am. J. Ophthal., 31:1568, 1953.

3. Pahwa, J. M.: Recent advances in Ophthalmology, Indian J. Ophthal., 14:7.

DISCUSSION

Dr. George M. Haik (New Orleans): The use of the Ridley acrylic implant in cataract surgery became known to both profsesion and public in America by way of articles in the lay press. Scientific observations in British medical journals became available shortly afterward, but the introduction was unfortunate. It is the exceptional ophthmologist who, since then, has not been importuned by patients with cataracts who have heard of the operation by way of these popular articles or who, later, saw it on television and who want it performed on themselves.

To date I have acceded to none of these requests, and it is with a good deal of hesitancy that I rise to speak about an operation which I have not performed and which, unless I suffer a complete reversal of convictions, I am unlikely to perform.

Mr. Ridley's recent report, which concerns some 140 cases, might seem to convince the most skeptical of the value and safety of this procedure, but I remain unconvinced. When Dr. Vail, in 1952, discussed Mr. Ridley's remarks before the American Academy of Ophthalmology, he said that he was agreeable to being called a reactionary because he opposed the operation. He paid tribute, as we all must, to the ingenuity, courage and skill of the author, and to his scientific integrity. He felt, however, that in spite of Mr. Ridley's remarkably successful run of cases—now double the number he reported then—this was still an operation "of considerable recklessness." In his opinion the hazards still far exceeded the little to be gained in the way of ocular comfort for the patient and the questionable advantage of obtaining binocular vision at such a risk.

I am afraid I am in complete agreement with Dr. Vail. As he says, there are enough complications in the classical operation to keep us awake at night. Futhermore, to quote Goar, a cataract operation is a major procedure to both patient and surgeon, and one to be undertaken only after careful and prayerful consideration.

The Ridley implantation operation, as Mr. Ridley specifies, must not be performed by the intracapsular technique. In 7 of the 10 cases in which he used this technique, the implant, although it was inserted without difficulty, underwent spontaneous and usually gradual dislocation into the base of the vitreous chamber. In 3 of 8 cases in which the posterior capsule was removed accidentally in the course of planned extracapsular extraction the same accident happened, but more promptly.

These results convinced Mr. Ridley that intracapsular extraction and implantation of his acrylic lens were not compatible. He now limits the use of the lens to the extracapsular technique.

His experience in 140 odd cases has been that when the posterior lens capsule has not been damaged at operation, the lens, in the absence of trauma, will remain in place.

What interests me most in Mr. Ridley's reports is the complications he lists. In his 1952 address before the American Academy of Ophthalmology he stated that 90 per cent of his cases had progressed smoothly. In his 1954 report, while he does not state specific figures, he seems to be continuing what I can only term the same run of luck. He has had no instance of sympathetic ophthalmia in his series; most of us could not hope to be so fortunate. He has, apparently suffered only three really serious postoperative complications, as follows:

1. Iritis. This he considers the result of surgical trauma and, perhaps, leaving a little cortex adherent to capsular tags. I am interested that Dr. Flinn's patient suffered this complication, and that he regards it as due to a combination of foreign body reaction and the presence of lens material. Ridley's experience convinced him that fair vision might be expected within a month, and good visual acuity within three months, in the majority of cases in which this complication appeared.

2. Occlusion of the pupil. This is a result of a dense inflammatory membrane, which is particularly prone to develop if the pupil has been allowed to constrict. It is managed by secondary surgery when iritis has ceased to be active. The results of division of the membrane and the use of mydricaine and cortisone were dramatic in Ridley's cases, vision of 6/12 usually being attained within a week, with further improvement to be expected later.

3. Glaucoma. The slight temporary rise of tension encountered in a few cases readily responded to miotics, and a drainage operation was necessary in only 1 case, in which the original cataract surgery had been extremely defective. Secondary glaucoma encountered in 4 other cases responded to peripheral iridotomy.

This is a highly favorable picture. Dr. Flinn's patient emerged well from her complicating iritis. But proof is still lacking that acrylic implants are harmless. This proof can come only with the passage of time and with histologic study of eyes in which the procedure has been carried out. Few such reports now exist, and these have attracted little attention. In 1953, Dr. Theobald was able to examine such a specimen. It showed an inflammatory reaction in the iris and connective-tissue membrane, in answer, as she expressed it, to the "insult" of the irritating acrylic lens which had been implanted several weeks earlier. This and similar reports should be recollected when the temptation arises to use the Ridley technique.

I think all of us will agree with Mr. Ridley that correction of an aphakic eye by the ordinary spectacle lens has grave disadvantages. The image is unnaturally magnified. Acuity is good only through the optic center of the lens. Oblique views cause distortion and apparent displacement of objects. The usual visual field is limited. Finally, accommodation is minimal. With the implantation technique accommodation is not improved, but otherwise, according to Mr. Ridley, the acrylic lens restores natural sight throughout the full visual field, sight which is often as good as that of the normal presbyopic eye in which accommodation has been lost. In his experience many patients prefer binocular vision, with acuity of 6/12 or thereabouts, to better uniocular vision in one or the other of an incompatible pair of eyes. Dr. Flinn has mentioned that his patient is happy with the acuity achieved for her.

Mr. Ridley's present feeling is that the implantation technique he has devised is, to use his own term, "unrivaled" for uniocular cataract and may well prove to be the ultimate treatment for it, chiefly because binocular vision is restored. Its advantages in senile cataract are more debatable because the ordinary classical operation supplies the two things patients most need, namely, the ability to go about alone and the ability to read. In his latest report he says that only time will tell whether in cases of bilateral cataract the optical, cosmetic, and psychologic advantages will outweigh the disadvantages of extra complications and slower recovery of sight as compared with the classical technique. He thinks that the evidence to date already points to this conclusion. He warns, however, that when this operation is used, both surgeon and patient are playing for higher stakes, and that faults are more heavily penalized than they are when plain extraction is done.

All of this is no doubt true. I congratulate Dr. Flinn on the end results he has secured. None the less, I shall continue, for the present, at least, to hold to Dr. Vail's policy: Even if patients are willing to take the chance that this operation may hold for them, I am unwilling to submit them to it, for they can have no true conception of its real hazards.

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YELLOW FEVER AGAIN THREATENS THE SOUTHERN HALF OF THE UNITED STATES

"Wherefore, let him that thinketh he standeth take heed lest he fall." (I Corinthians 10:12). This quotation from Scripture applies accurately to the attitude towards yellow fever in the southern half of the United States. The threat that now exists is one concerning which we should all take heed lest we fall into a series of epidemics and disasters which yellow fever has produced in this geographical area through many centuries.

The spectacular work of the Yellow Fever Commission in the latter part of the last century produced a clear cut picture of the transmission of the disease in this area. The practical application of these findings was demonstrated by Gorgas, in preparing for construction of the Panama Canal. Following this, the six day incubation period of the disease provided time for inspection and quarantine to exclude the entrance of persons carrying yellow fever into the United States and thus prevent the reappearance of urban epidemics. This was possible even though the disease-carrying domestic mosquito, *Aëdes aegypti,* was prevalent throughout the area formerly subject to epidemics. This situation of comparative security was not disturbed, even though the airplane shortened travel time, and many travellers passed beyond quarantine before the expiration of the six day incubation period. The reason for this was that there was no yellow fever to bring in except from the west coast of Africa, and possibly, from some areas in Brazil. An urban epidemic of yellow fever appeared in Rio de Janiero in 1928-1929. Following this, energetic measures on the part of the Brazilian government eradicated the *Aëdes aegypti* mosquito from that country. In the meantime, the whole yellow fever situation has been altered by a series of developments, not previously anticipated, and now the situation is one of much concern.

It appears that jungle or sylvan yellow fever has existed in portions of Central America, possibly Colombia, for countless ages, and that in 1948 a wave appeared to originate in eastern Panama, and has been moving westward and northward through Central America since that time. Recognition of this type of yellow fever has depended upon a variety of researches and has been made possible by the identification of the typical lesion of yellow fever in the liver, such that it may be recognized in monkeys dying in the areas

concerned. The vector in this sylvan yellow fever is not the *Aëdes aegypti,* which is a domestic mosquito living in and around towns and human habitations, but a variety of forest mosquito spoken of in the area as the "blue mosquito," breeding in trees below the 2000 foot contour, and apparently providing the means for the production of epizootic activity and epidemic outbreaks. The theory is advanced that the disease has been active in this fashion in the jungle areas of Central America through the ages. Epidemics are described in the Malayan Empire before the days of Cortez. Invasion of the country by Europeans brought the *Aëdes aegypti* providing the means for extensive urban epidemics. Following this, presumably, the urban and the forest areas reinfected each other to produce urban-sylvan and sylvan-urban transference of the virus. This condition prevailed until the modern era of sanitation and epidemic control.

Sylvan yellow fever appears to have been subject to periods of quiescence and activity concerning which there is not complete understanding at the present time. The present wave has been advancing at the rate of approximately 160 miles per year.[1] Its advance into Costa Rica, Nicaragua, and Honduras, was predicted and has already been proven accurate. Progression into Guatemala is anticipated for the current year. In four years more the wave is expected to reach the area just north of Vera Cruz. Panama, Nicaragua, Costa Rica have been declared free of *Aëdes aegypti,* but from there north the picture changes. Small infested areas are found in El Salvador and Honduras, and a much larger one in Guatemala. The *aegypti* infested area continues southerly along all of the Atlantic and Pacific coastal regions of Mexico, jutting into the United States where as yet there is no campaign to eradicate the *Aëdes aegypti* mosquito.

Obviously, if sylvan disease advances to points along the Gulf of Mexico, where *Aëges aegypti* is prevalent, epidemics become possible. The traveller contracting the disease in the forest area may transmit it to any *Aëdes aegypti* infested zone. A line drawn from Yuma, Arizona, to the northeastern corner of New Mexico, then across the country to the Atlantic at the boundary between North Carolina and Virginia, marks the northern limit of the presence of the urban yellow fever mosquito in the United States. That embraces the whole southern third of the country which has been declared by the U. S. Public Health Service as a "receptive area" (i.e., open to the introduction and transmission of yellow fever.)

Specimens of the "blue mosquito" that transmits the sylvan yellow fever have been found within 300 miles of the northern Mexican border in the Mexican state of Tamanliepas, which borders on Texas. Obviously the disease may be feared along the eastern coast of Mexico and the threat of its spread into the receptive area is one of grave concern. Two recovery cases in human patients are recognized in the vicinity of La Ceiba, Honduras, in August 1954. There were 213 cases of yellow fever in the San Juan de Dios, Hospital, San Jose, Costa Rica, in 1951-1952, with 56 deaths.

It is stated that control of this situation will require greater energy and greater research than is now being displayed. It is impossible to eradicate the sylvan form of disease. Accordingly, protection of the population in this area will be possible only through vaccination. Protection of travellers by vaccination is feasible. Prevention of the urbanization of the disease in the United States could be accomplished with certainty only through eradication of the *Aëdes aegypti.* Energetic measures accomplished this in Brazil whose area is greater than ours. Prevention of infestation of our vast mosquito population can only be accomplished by its destruction, and this should be done before 1958.

Elton states that during the period of viremia man is infectious to mosquitoes and that in man the virus is usually neutralized before the fourth day of the dis-

ease. Death or recovery depends upon the severity and rapidity of the involution of the liver lesion and the development of a hemoglobinuric nephrosis. Infection is followed by hepatitis, which is histologically typical; this, in turn, by a prothrombin deficiency and hemorrhagic diathesis. Hemoglobinuric nephrosis is followed by oliguria, anuria, and uremia. Mild infections may exist and some infections may be inapparent. The mortality in the white population of Costa Rica in classical cases was 27.6 per cent. Death occurred from the fourth to the twenty-seventh day, with the majority on the sixth to the eighth.

From these various considerations it would appear that the threat of yellow fever returning to the Southern States exists, and that among the measures by which this may be prevented, a most important one is eradication of the *Aëdes aegypti* in this area.

[1] Elton, Norman W.: Anticipated progress of yellow fever in Guatemala and Mexico, 1955-1959, Am. J. Pub. Health 45:923, (July) 1955.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

NATIONAL LEGISLATION

Again with Congress closed and many members in their home districts, I want to suggest that you get in touch with them. Let them know how the profession feels about certain legislation—and why . . . Defense Department (see S. 2720) has presented Congress with a revised bill for the medical care of military dependents, a subject that is likely to get serious consideration next session. American Hospital Association also has offered its dependent care plan, with emphasis on Blue Cross.

CONGRESS CLOSES FIRST SESSION WITH MANY HEALTH BILLS PENDING

The 84th Congress wound up its first session August 2 after a last-day compromise on a grants bill to aid states in paying for Salk vaccine programs through next February 15. Three days previously Senate and House finally agreed on $30 million for financing of inoculations, just half what the Senate originally had voted.

Adjournment found two medically important bills at the half-way mark in Congress: the Hill-Bridges $90 million grants bill for construction of research facilities (passed the Senate and pending in House Interstate Committee) and the Democratic-sponsored national compulsory disability insurance plan (passed the House and pending in Senate Finance Committee) . . . Still before committees but with hearings completed are: Jenkins-Keogh tax deferment bills and federal aid to medical education.

Other bills facing Congress on its return in January: aid to nursing education, dependent medical care, contributory health insurance for federal workers, mortgage guarantees for health facility construction, reinsurance of voluntary health plans, military medical scholarships and practical nurse training. Health bills, President Eisenhower reminded a press conference, should be handled as soon as Congress comes back.

NEW SENATE LEGISLATION

S. 2588 (Humphrey, D-Minn., July 20). **Deduction for Income Tax.** Would amend 1954 Internal Revenue Code to permit a married man the same income tax deduction as a woman for certain expenses incurred for the care of his children while his wife is physically or mentally incapable of caring for them. As with women under present law, care would have to be to enable the taxpayer to be gainfully employed.

S. 2720 (Russell, D-Ga., & Saltonstall, R-Mass., by Request, July 30). **Dependent Medical Care.** Introduced at Pentagon's request as a broader substitute for S.934 and H.R. 2685. The Assistant Secretary of Defense in the transmitting letter of July 30, said further technical improvements "in all probability may be proposed such for example, as the coverage of widows and the dependents of deceased military personnel and the extent to which military personnel may be authorized on their own option to move in and out of insured status."

This legislation would incorporate basic recommendations of the 1953 Moulton Committee. It would authorize medical care for dependents of members of Armed Services (as implemented by regulations of Secretary of Defense and approved by President): (a) in military medical

facilities subject to availability of space, facilities and capabilities of medical staff; (b) through an insurance plan; (c) using civilian medical sources for dependents not participating in insurance plans, provided no military medical facilities are available to such dependents. Definition of Dependent: "Dependent" is restricted to wife, unmarried children under 21 and over 21 if mentally or physically incapacitated and in fact dependent on member for over half support, and parents and parents-in-law if in fact dependent for over half their support. A husband must be dependent upon wife for over half his support to qualify as a dependent. Secretary of Defense would establish charges for subsistence and "necessary" charges for outpatient care in military facilities. Insurance plan charges would be apportioned between Federal Government and members of Armed Forces, with member's contribution not exceeding 30% of monthly cost nor a maximum of $3.00. Secretary would establish schedule of maximum fees and costs for civilian licensed physicians and facilities and dependent would be required to pay 30% of the first $100 plus 15% of the remainder of the cost of inpatient care and 30% of cost of outpatient care. For protracted illness, dependent could be transferred to military medical facility or Secretary of Defense could "take such other appropriate action" to alleviate the hardship.

Excluded would be hospitalization for domiciliary care, chronic diseases and chronic mental and nervous disorders. Also excluded would be provisions for prosthetic devices, hearing aids, orthopedic footwear and spectacles, ambulance service and home calls except in emergency and special cases as determined by physician. In remote areas government could furnish at cost if prosthetic devices were available. Mental treatment would be restricted to emergency care, except in remote areas. No dental treatment through civilian dentists at Government expense would be permitted, except as a "necessary adjunct to medical or surgical treatment."

Dependent medical care would be limited to "diagnosis; treatment of acute medical and surgical conditions; treatment of contagious diseases; immunization; and maternity and infant care."

Secretary of Defense would be authorized to promulgate regulations to fix charges "to implement this legislation fairly, and to prevent excessive demands for medical care." It would be a "basis in law for the needs . . . during peacetime and in times of national emergency." The estimated annual cost, using 2,204,500 dependents as of December 31, 1954 as a basis, would be $76,000,000.

NEW HOUSE LEGISLATION

H.R. 7602 (Keogh, D-N. Y., July 26). **Income Tax Deduction for Charitable Contributions.** The bill has three provisions: (a) money donated to voluntary health insurance plans would be deductible before payment of income, gift or estate taxes; (b) Benefits received from voluntary health plans would be deductible for income tax purposes; and (c) the cost of coverage under voluntary health plans would not be deductible for income tax purposes.

H.R. 7608 (Priest, D-Tenn., July 26). **Mortgage Insurance for Nursing homes.** Would authorize Federal mortgage loan insurance for construction of nursing homes. Provisions are substantially those of Title II of Administration's Omnibus Health Bill (S. 886 & H.R. 3458) except that insurance would be restricted solely to mortgages on nursing homes, both nonprofit and proprietary. **Interstate and Foreign Commerce.**

H.R. 7621 (Rains, D-Ala., July 26). **Food for Hill-Burton Hospitals.** Would provide state health agencies food subsidies for Hill-Burton hospital patients.

H.R. 7792 (Vinson, D-Ga., Aug.1). **Dependent Medical Care.** Identical with S. 2720 (see above).

ACTION

Treaty of Friendship . . . with Germany. On July 27, by a vote of 83 to 0 the Senate ratified the Treaty with Germany favorably reported to the Senate by its Committee on Foreign Relations on July 19. The Senate was advised the treaty omits previous objectionable features regarding the practice of certain professions (medicine included) "which might have required changes in some State laws." Senator Green explained the Committee was assured that the pending treaty does not impair "the Constitutional rights of American citizens or alter established Federal-State relations or enlarge Federal powers at the expense of the States." Nationals of both parties to the treaty shall have the same treatment under sickness, old age, disability or unemployment social security laws where means tests are not involved.

S. RES. 134 (Green) **Atomic Fallout.** The Senate on July 18 adopted the resolution directing the chief U. S. delegate to U. N. to collate radiological information from various States.

H.J. Res. 256 (Priest) **Mental Health Study.** This measure became Public Law 182 when the President signed the bill July 28. Federal grants would enable recipients to coordinate efforts in nation-wide study of mental illness.

H.R. 483 (Short) **Commissioning Osteopaths in the Military.** Senate Armed Services Committee on July 28, turned over to a subcommittee of Smith (Me.), Symington (Mo.), and Jackson (Wash.), this measure "for further study", thus eliminating the possibility of further action this session.

H.R. 2559 (Bolton) **Commissioning Male Nurses in the Military.** Senate on July 30 sent to the White House the House-passed authority for

commissioning military male nurses. Approved by Senate Armed Services Committee July 28.

H.R. 7225 (Cooper) **Social Security Amendments.** On July 25 Senator Cotton offered the administration's plan to increase grants for the medical care of the needy aged, blind, disabled and dependent children. If they matched the money dollar for dollar, states could get a maximum U. S. contribution of $3 per month for each child and $6 for each adult. This same legislation is found in Congressman Reed's H.R. 3293 and in Senator Cotton's S.1198.

FIRST NEW H-B PROJECT APPROVED

The first project to be constructed under the new Hill-Burton program has been approved for Pinal County, Florence, Ariz. It is a 53-bed nursing home addition to the Pinal County General Hospital, to be used for nursing and medical care of the aged. It will be physically separated from the hospital, but will use the latter's facilities and personnel. At present, patients who could be cared for in a home of this type are occupying 12% of the beds in the general hospital.

The new Hill-Burton program authorizes aid on a matching basis for the building of chronic disease hospitals, nursing homes, diagnostic and treatment centers and rehabilitation facilities.

Because of the new HB program, the name of the federal headquarters office has been changed from the Division of Hospital Facilities to the Division of Hospital and Medical Facilities.

ATTENTION ALL MEMBERS

We are in receipt of a letter from the Electrical Association of New Orleans, Inc., requesting that we alert our members in calling to their attention "the discarded refrigerator hazard" and asking their cooperation in a "safety campaign" which is being put on in Louisiana by the National Safety Council, the Electrical Association that we alert our members in calling to their at- of New Orleans, Inc., and the National Electrical Manufacturers Association, to save unfortunate children from the fatal accidents involving those who might crawl into discarded refrigerators or ice-boxes.

In August of last year, five in one family—three in another—perished in this manner.

For your information we have in Louisiana, Act No. 75 dated June 23, 1954, which provides for disposition of Discarded Refrigerators and Other Containers and also specifies penalties for violations. Our chief aim, as medical men, is to save lives. Why not support this important safety drive? A million refrigerators and freezers are being discarded annually. "The child you save may be your own."

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

ATTENTION! OPHTHALMOLOGISTS

The following resolution was passed at the Annual Business Meeting of the Pennsylvania Academy of Ophthalmology and Otolaryngology, May 21, 1955, Atlantic City, New Jersey.

WHEREAS, the optometrical organizations in the United States of America have openly announced their determination to invade the field of Ophthalmology, and to restrict the Ophthalmologist in his practice; and

WHEREAS, this has actually been accomplished in some states; therefore, be it

RESOLVED: that the Pennsylvania Academy of Ophthalmology and Otolaryngology express its awareness of this problem and recommend that it be brought to the attention of the various

county and state medical organizations and to the appropriate committees of the Eye Section of the American Medical Association.

LAFAYETTE PARISH MEDICAL SOCIETY TO SPONSOR SECOND FOUNDERS DAY SEMINAR

"The Lafayette Parish Medical Society, and The Third District Medical Society will jointly sponsor the Second Founders Day Seminar at the Evangeline Hotel in Lafayette, Louisiana on Saturday, Oct. 1, from 10:00 a.m. until 6:00 p.m. A broad list of speakers representing faculty members of the L.S.U. School of Medicine will discuss this year, subjects of interest to general practitioners and specialist alike. An invitation is extended to members of the medical profession to attend this meeting. There will be no fee.

The program will include the following speakers and their subjects:

Dr. Philip Tiller
Hermones in General Practice;
Dr. Morris Shushan
Liver Disease in Ambulatory Patients;
Dr. Richard Fowler
Congenital Heart Disease;
Dr. Daniel Hayes
Problems in the Control of Diabetes;
Dr. W. R. Akenhead
Gastrointestinal Bleeding;
Dr. Charles Miangolarra
Treatment of Hyperthyroidism;
Dr. Milton McCall
Management of Toxemia of Pregnancy;
Dr. John Adriani
Nerve Block in the Control of Pregnancy;
Dr. George Mellinger
Recent Advances in the Treatment of Prostatic Disease;
Dr. Irving Redler
Recent Advances in the Treatment of Fractures;

A clinico-pathological conference will also be held.

Detailed information may be obtained by writing Arthur A. Stamler, M. D., Secretary-Treasurer, Third District Medical Society, 510 St. Landry St., Lafayette, La."

THE POLIOMYELITIS VACCINATION PROGRAM IN LOUISIANA

The following program has been approved by the Louisiana State Department of Health, and the Louisiana State Medical Society.

The National Foundation for Infantile Paralysis Program for the vaccination of all first and second grade children in Louisiana is nearly complete. The program started April 18, 1955. Provision of vaccine for first inoculations stopped July 7th. All second inoculations are now complete in so far as we were able to do before closure of the schools. Of the 164,910 children eligible for vaccination 132,949 (80.6%) received the first inoculation and 73,312 (59.8%) of those receiving the first inoculation received the second. To give each child who received the first inoculation a chance to receive the second, consideration is being given to extending the time for obtaining the second inoculation under this program to September 30, 1955. All vaccine necessary to complete this program will be made available by N.F.I.P.

Vaccine for commercial use is now becoming available. As the N.F.I.P. program terminates more and more polio vaccine will become available to physicians and public agencies. To avoid rigid government controls a voluntary system of control to assure equitable distribution of vaccine through normal marketing channels is being worked out. To function properly close cooperation and teamwork by the Public Health Service, manufacturers of polio vaccine, retail drug outlets, physicians, the State and local Medical Societies, and the State Department of Health is essential.

A National Advisory Committee on Poliomyelitis Vaccine has been established. A State Advisory Committee composed of four representatives of the State Medical Society and four physician representatives of the State Department of Health has been formed and is functioning. The representatives of the State Society are Drs. Philip H. Jones, W. E. Barker, Max Miller and C. Grenes Cole; of the State Department of Health, George H. Hauser, Ben Freedman, Andrew Hedmeg and J. D. Martin.

The State Department of Health is charged with the responsibility of assuring an equitable distribution of vaccine to all the parishes of the State.

The State Medical Society and the State Polio Vaccine Advisory Committee recommend the activation of Parish Society Gamma Globulin Committees so that their experience with the intra-parish distribution of Gamma Globulin can now be used to advantage in the intra-parish distribution of polio vaccine.

The National Advisory Committee on Poliomyelitis Vaccine will from time to time designate a specific priority group to receive the vaccine. Only persons in this designated group are to be vaccinated. For the present the 5-9 year age group and pregnant mothers are the only groups to receive vaccine. As further priority groups are established this Journal will carry the information.

The objective of this Voluntary Distribution Plan is to assure that vaccine is distributed to all areas of the State in such a manner that it is available to all persons in the priority group designated. Unless this is accomplished, legitimate criticism of our State and the National plan for the voluntary distribution and use of the vaccine may be expected.

The voluntary plan is based on the assurance that physicians will conform to the general principles and policies established by the National Advisory Committee on Poliomyelitis Vaccine and the State Advisory group.

The manufacturers will keep the State Department of Health posted on all vaccine shipped into Louisiana. Vaccine distributed by retail druggists or invoiced to physicians through retail druggists will be made known to the State Department of Health by weekly reports from the druggists. This vaccine usage will be charged against the total amount of vaccine allocated to a particular parish. When the parish's allocation is used no further vaccine will be available to that parish. Should questions arise concerning the distribution and usage of vaccine, they may be referred to the State Poliomyelitis Vaccine Advisory Committee care of the State Medical Society or the State Department of Health.

Louisiana has 293,688 children in the age group 5-9 years. Each Parish Health Unit and each local poliomyelitis vaccine committee will be apprised of the number of eligible children for the parish of their jurisdiction.

Physicians are urged to keep complete information on each person immunized. This data is essential to an evaluation of the program progress, the efficacy of the vaccine, and for epidemiological purposes should the efficacy or the safety of the vaccine be questioned. Each immunized persons record should show the person's name, age, sex, color, address of residence, name of manufacturer and lot number of vaccine, sites and dates of inoculations and any reactions.

Physicians should immediately report by telephone to the Parish Health Unit or the State Department of Health any unusual occurrence of disease which might be related to the vaccination program.

Vaccination consists of three inoculations of vaccine, each given intramuscularly in 1.0 ml (1.0 cc) amounts. The second dose should be given 2-6 weeks after the first dose, and the third dose about seven months after the first, preferably just before the polio season starts. To avoid administration during the polio season, the State Poliomyelitis Advisory Committee suggests that previously non-vaccinated persons receive the first inoculation in October and that subsequent inoculations follow the suggested schedule except that where possible the third or booster inoculation be given before June 1st.

In areas of high prevalence of poliomyelitis primary inoculations should be avoided because of the existence of individuals who may be in the incubation stage of poliomyelitis. The second dose of vaccine should be administered however if the first has already been given as this will enhance the protection afforded by the first.

It is possible that children who received the first injection of vaccine under the N.F.I.P. program but who have not received the second may ask physicians to give them the second injection. In these instances the physician may obtain information concerning the prior poliomyelitis vaccine experience of the child from the local health unit.

At this time the Public Health Service has been advised by the State Board of Health to instruct the manufacturers that all poliomyelitis vaccine allocated to Louisiana is to be shipped through normal commercial channels for use by physicians; subject to change as the program develops.

AMERICAN COLLEGE OF CHEST PHYSICIANS AWARDS FELLOWSHIP CERTIFICATES

The annual Convocation of the American College of Chest Physicians was held in Atlantic City, New Jersey, on June 4, during the 21st Annual Meeting of the society. Certificates of Fellowship were awarded to 251 members from 42 states, the District of Columbia, 5 provinces of Canada, and Brazil, India, Korea, and the Philippines.

The following physicians from Louisiana received their Fellowship Certificates: Howard A. Buechner, New Orleans; Dwight S. Danburg, Greenwell Springs; Harry B. Greenberg, New Orleans.

ANNOUNCEMENT OF THE VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of $300.00 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held at the Drake Hotel, Chicago, Illinois, May 3, 4 and 5, 1956, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations, should not exceed 3,000 words in length and must be presented in English. Duplicate typewritten copies, double spaced should be sent to the Secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany, New York, not later than January 1, 1956. The committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for the presentation of the winning essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the Association.

NEW A.M.A. DRUG EVALUATION PROGRAM OUTLINED

A new program to give physicians timely information on the usefulness and safety of new drugs was announced today by the Council on

Pharmacy and Chemistry of the American Medical Association.

The council's announcement, in the July 30 Journal of the American Medical Association, is the first in a series by A.M.A. councils on programs inaugurated to replace various "seal-acceptance" activities discontinued in February.

The council will examine available published and unpublished evidence relating to the actions, uses, dosages, hazards, and other properties of drugs. It will not conduct clinical and laboratory tests. Reports of these evaluations will be published for the information of the medical profession.

ROUTINE PROCTOSCOPY

Routine examination of the colon and rectum as a part of every complete physical examination of every adult patient in order to find tumors before symptoms develop and malignant degeneration occurs is recommended by Dr. Neil W. Swinton in the Lahey Clinic number of **Surgical Clinics of North America,** (35:833 (June) 1955).

Technical improvements in enema preparations, which are now available in disposable polyethylene containers, have facilitated the preparation of patients for sigmoidoscopy, writes Dr. Swinton.

"These have made it possible for us to give cleansing enemas satisfactorily with a minimum of time and equipment," he says. "We have used these disposable units for several thousand patients and we have found them as effective, or more so, than soapsuds enemas." The preparation of patients who give themselves an enema at home is described as unsatisfactory.

Polyps are found in approximately 5 percent of patients, regardless of symptomatology, who are examined by sigmoidoscope at Lahey Clinic, the author states.

SCIENTISTS REPORT UNIQUE EPIDEMIC

A unique epidemic was reported in the June 25 Journal of the American Medical Association.

Four Duke University scientists described an epidemic of North American blastomycosis, a fungus disease limited to the United States and Canada. It occurred in 1953-54 in a four-mile area centering around the town of Grifton in Pitt County, N. C.

The disease, rarely diagnosed two decades ago except in a few medical centers, may occur in the Midwest, Ohio River Valley, and the southeastern United States, which are areas where some cases have occurred. The report was made in order to alert physicians and public health workers in those areas.

No cause for the epidemic has been found, but the scientists hope a study of the Grifton area and population may provide a clue to the method of disease spread.

Eleven cases of North American blastomycosis were admitted to Duke University Hospital within a few months. All patients lived either in Grifton or within a four-mile radius of the town.

The occurrence of 11 cases within a few months in a small area can be considered as "epidemic" since it was a sudden increase in contrast with the record of 14 cases scattered over the past 16 years through the much larger area of Pitt County and seven adjacent counties, the scientists said.

THE IMPORTANCE OF THE SMALL HOSPITAL

The hospital with 100 beds or less is the backbone of our nation's hospital care, according to an article by Ray E. Brown, superintendent of the University of Chicago Clinics and president-elect of the American Hospital Association. He is the author of an article, "Importance of Small Hospitals to the Nation," published in the July issue of HOSPITALS, the Journal of the American Hospital Association.

In stressing the importance of small hospitals to the nation, he pointed out that of the 5,212 general and short term hospitals listed in 1954, 3,533 are small hospitals. These hospitals, he said, admit 5.5 million patients a year and record 836,500 births annually.

PHYSICIAN DOUBTS EXISTENCE OF "ULCER PERSONALITY"

Doubt as to "the nature or even the existence of a specific ulcer personality" was expressed today by a Cleveland physician.

It has become common in the last few years for doctors and the public to refer to certain persons as being of the "ulcer type." Articles and even a book have been written on the subject.

Yet investigators cannot agree on what goes to make up the "peptic ulcer personality," Dr. Harold P. Roth said in the July Archives of Internal Medicine, published by the American Medical Association.

He found that a number of different personalities were described as typical in various studies on the topic. "There was no whole personality or feature of personality that was agreed upon by as many as a third of the investigators," he said.

Personality traits most frequently mentioned were drive, conscientiousness, and anxiety. "Although other traits were described, the statements about most of them were contradictory," he said.

SELF-HELP DEVICES FOR ARTHRITIS

The past few years have focused attention on the importance of self-help devices for the arthritic in enabling him to meet the demands of daily living. As a result, the National Office of the Arthritis and Rhematism Foundation has ap-

propriated a grant to implement a central office for the collection, evaluation, development, and dissemination of information concerning self-help devices for the arthritic. The office, located in the Institute of Physical Medicine and Rehabilitation of New York University-Bellevue Medical Center will be under the direction of Dr. Edward W. Lowman, clinical director of the Institute and of clinical physical medicine and rehabilitation. Miss Muriel Zimmerman, O.T.R., will be consultant.

The primary purpose of the Arthritis Self-Help Device Office is to provide, without cost, information on the latest self-help devices developed as well as offering free consultation to arthritic patients by mail, telephone, or through personal interview.

In addition, patients or physicians who have developed self-help devices are urged to submit them for testing and evaluation so that they may be made known to other patients.

The Arthritis Self-Help Device Office may be reached on Mondays and Wednesdays between 9:00 a.m. and 5:00 p.m. Telephone MUrray Hill 6-1842, ext. 85. Address mail to the Institute of Physical Medicine and Rehabilitation, 400 East 34th Street, New York 16, New York.

A.M.A. COMMITTEE RECOMMENDS ASPIRIN BOX WARNING

All packages containing aspirin or other salicylate compounds should bear a clear warning, "keep out of the reach of children," according to the Committee on Toxicology of the American Medical Association.

Pointing out that oil of wintergreen and aspirin are forms of salicylates most often involved in childhood poisonings, a report adopted by the committee also recommended:

That the label should state "Consult your physician on dosage for children under three years of age."

That individual pills be wrapped in metal or plastic foil that cannot be easily removed by children, or that the container have a top which closes automatically.

FACTS ABOUT CANCER DETECTION

1. Each year more than 33,000 Americans die from cancer in "ten neglected inches of the body (large bowel, including colon and rectum). In 1952 the death toll was 33,184 people.

2. Cancer specialists agree that early detection is the key to control. For detection of 75 per cent of cancers of this type, they recommend examination by an instrument called the sigmoidoscope. Three out of four of all malignant and potentially malignant lesions fall within its 10-inch range.

3. Thus, of the 33,814 people who died in 1952, 25,360 had cancer which could have been detected by the sigmoidoscope. If they had been examined soon enough—in the pre-cancerous or early cancer stage—a large percentage could have been saved.

4. A major obstacle to carrying out this life-saving cancer-detection procedure is the inconvenience in readying patients. Few clinics have facilities for elaborate and time-consuming preparations. When patients are given instructions for preparations at home, more than half do not carry out the instructions properly. A satisfactory examination depends largely on effective colonic cleansing of the patient.

5. A new method has been developed by which patients can be prepared in a few minutes at the clinic or in the doctor's office. A disposable enema unit (Fleet Enema Disposable Unit) does away with cumbersome, long - drawn - out procedures. It avoids the danger of a spasm which may prevent the passage of the sigmoidoscope, as it contains sodium phosphate which relaxes spasms in sigmoidoscopy.

ADEQUATE SANITATION CAN CONTROL FLY PROBLEM

Although fly swatters and DDT may be ineffective in controlling flies, "there isn't the slightest need to permit this public health menace to continue in American cities and towns," according to the health educator of the Los Angeles County Health Department.

Writing in the July Today's Health, published by the American Medical Association, Edward R. Reinig, M.P.H., called for communities and individuals to clean up fly breeding grounds, thus eliminating "one of the greatest disease carriers in history."

Flies have been considered pests since the days of Moses. They have spread typhoid, dysentery, cholera, and other serious maladies.

Methods of combating them have included fly swatters, flypaper, screening, and, finally, during World War II the insecticide DDT. But in 1947 came the news that flies had "met the challenge" by developing a resistance to DDT and other insecticides.

ARMY IMPROVES INSERTS FOR HEARING AIDS

Army researchers have developed a soft plastic ear insert which should be a big improvement in hearing aids, radio receiver headsets, and as a protection against excessive noise.

Major James P. Albrite, director of the audiology and speech correction center at Walter Reed Army Medical Center, Washington, D. C., described the new earpiece in the February Archives of Otolaryngology, published by the American Medical Association.

He said that while the ear insert is not commercially available yet, it "undoubtedly would find wide acceptance by the thousands of hearing aid users." He said it even might be used as protection against infection and pressure which trouble persons in underwater activities.

The soft plasticized material is poured into a cast made from a mold of the ear and its inner canal; then it is stamped with a sound channel and recess for a receiver. The whole process takes about two-and-one-half hours and causes no discomfort to the patient. About 1,300 inserts have been issued at the center and patients reported they are comfortable to wear.

—o—

BOOK REVIEWS

Manic-Depressive Disease; by John D. Campbell, M. D., Philadelphia, J. B. Lippincott Company, 1953, Pp. 403, Price $6.75.

This volume is an attempt to discuss the diagnosis and treatment of a condition whose early manifestations frequently are overlooked by nonpsychiatric physicians. From a diagnostic viewpoint it is excellent in enabling one to recognize the disease early in its course. From a therapeutic outlook it does suffer from the author's obviously biased physiological viewpoint. Dr. Campbell views manic-depressive disease as a physiological disturbance in the autonomic nervous system. He maintains that a physiological disturbance is causative and the environmental factors only precipitate the illness. He apparently gives little credit to the effects of the emotions upon the autonomic nervous system.

Psychoanalytical tenets are overlooked, and emphasis is placed on the physical therapy of the illness. He does recognize the relative ineffectuality of physical therapy preventing exacerbations but cites as effective therapy such techniques as explanation of significant symptoms, environmental manipulation, the combatting of conscientiousness, psychotherapy of an obvious nature, advice to the family and friends, rest and relaxation, occupational therapy, bibliotherapy, and drugs.

GENE L. USDIN, M. D.

Fluoroscopy in Diagnostic Roentgenology; by Otto Deutschberger, M. D., Philadelphia, Pa., W. B. Saunders Company, 1955, Pp. 771, Price $22.00.

Most of the rather extensive literature on diagnostic roentgenology is based upon the radiographic method. Very little information pertaining to fluoroscopy is available and that which is at hand is incomplete. In spite of the fact that fluoroscopy requires training and experience there is an increase in the number of physicians, who are not radiologists, who are adding fluoroscopic equipment to their offices. Many errors occur in their attempts to obtain information by means of this method. Proper guidance is essential and should be of inestimable value to these nonradiologists.

This volume is an accurate and complete presentation of the subject of fluoroscopy. The indications and limitations of this method are considered. The correlation of this method with radiographic procedures in differential diagnosis is discussed fully.

The book is divided into two parts. Part One includes chapters on the development of fluoroscopy, fluoroscopic equipment, the conventional fluoroscopic image, the electronically amplified fluoroscopic image, physical and clinical evaluation of the fluoroscopic image, the hazards of fluoroscopy and foreign bodies and their localization. The chapter on the hazards of fluoroscopy should be read by all individuals who have contact with this method of examination.

Part Two deals with fluoroscopy of specific organs and anatomic tracts. This is subdivided into chapters covering the head, neck, chest, abdomen and extremities. The appendix includes suggested forms for recording the data of various fluoroscopic examination.

The bibliography consists of many carefully selected references at the end of each chapter. The illustrations are unretouched positive prints. This was done intentionally to show images as they actually appear on the fluorescent screen.

This volume has been written as a reference book as well as a text book. Considerable detail is included and the text is clear and concise. It should prove a valuable addition to the library of every physician who uses fluoroscopy in any form and a necessity to the roentgenologist.

J. N. ANÉ, M. D.

PUBLICATIONS RECEIVED

W. B. Saunders Company, Phila.: Clinical Biochemistry, by Abraham Cantarow, M.D., and Max Trumper, Ph.D. (5th edit.).

Charles C Thomas, Publisher, Springfield, Ill.: The Pathogenesis of Poliomyelitis, by Harold K. Faber, M.D.; Selection of Anesthesia: The Physiological and Pharmacological Basis, by John Adriani, M.D.; Radiographic Atlas of Skeletal Development of the Knee: A Standard of Reference, by S. Idell Pyle, Ph.D., and Normand L. Hoerr, Ph.D.; Atlas of Roentgen Anatomy of the Skull, by Lewis E. Etter, B.S., M.D.; Surgical Physiology of the Adrenal Cortex, by James D. Hardy, M.D.

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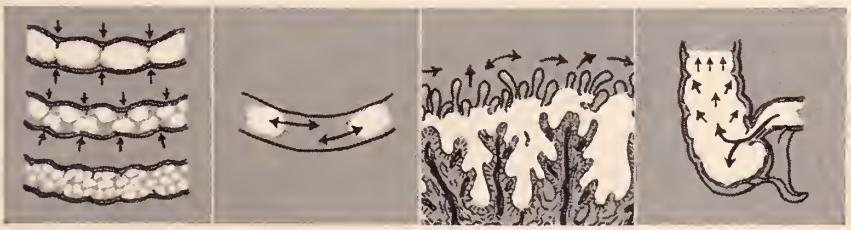
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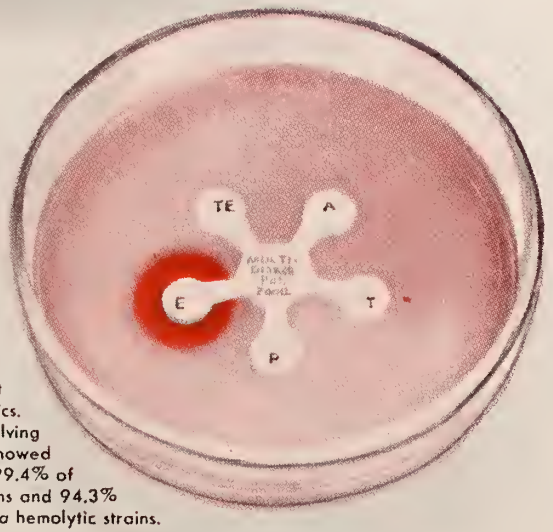
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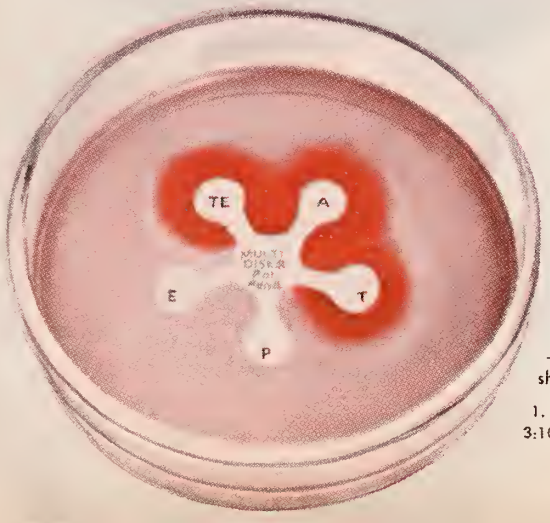
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1. Eisenberg, et al., Antib. & Chemo., 3:1026-1028, Oct., 1953.

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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.:
J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.:
Brit. M. J. 2:755, 1953.

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Brown, H. W.:
J. Pediat. 45:419, 1954.

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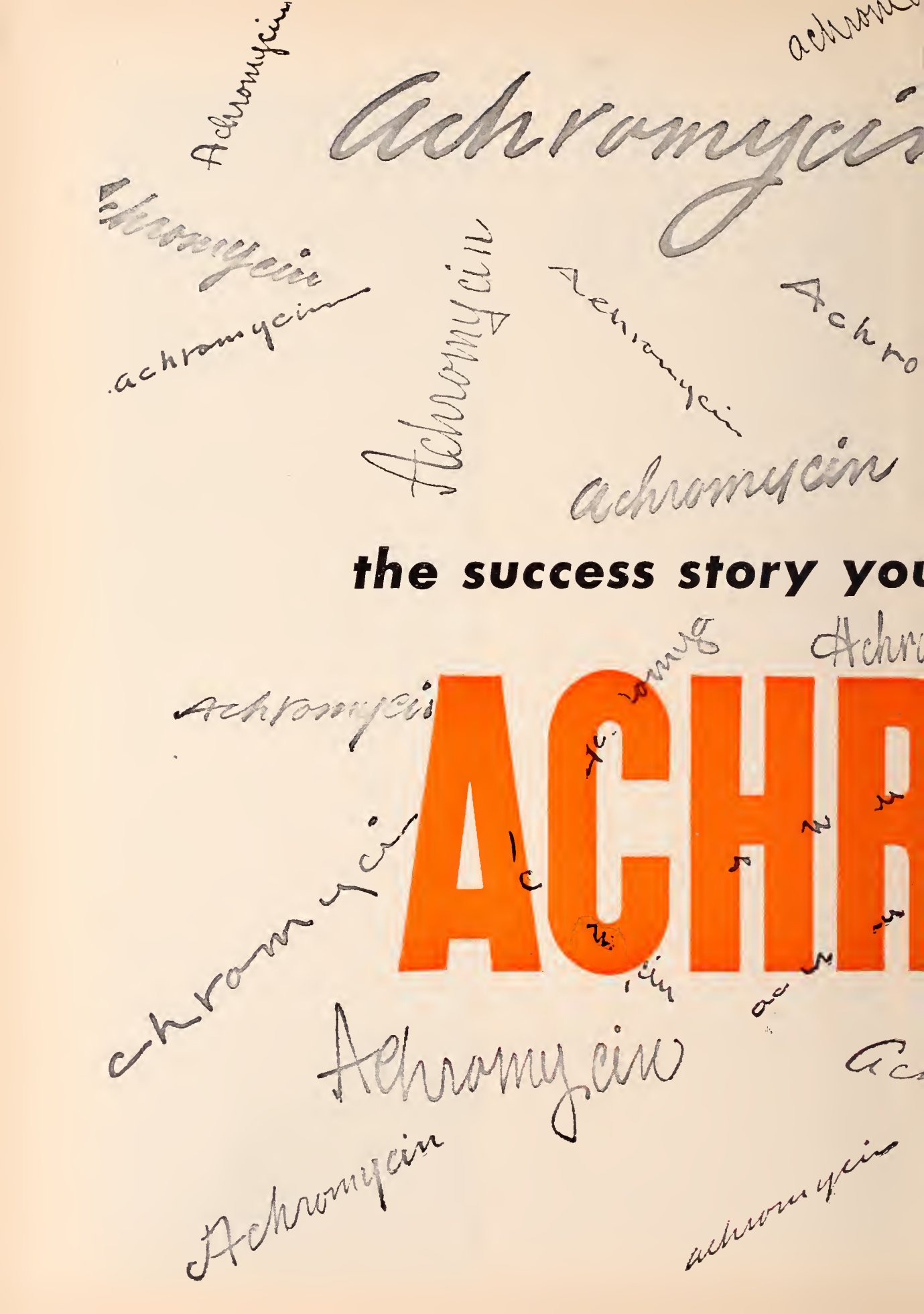
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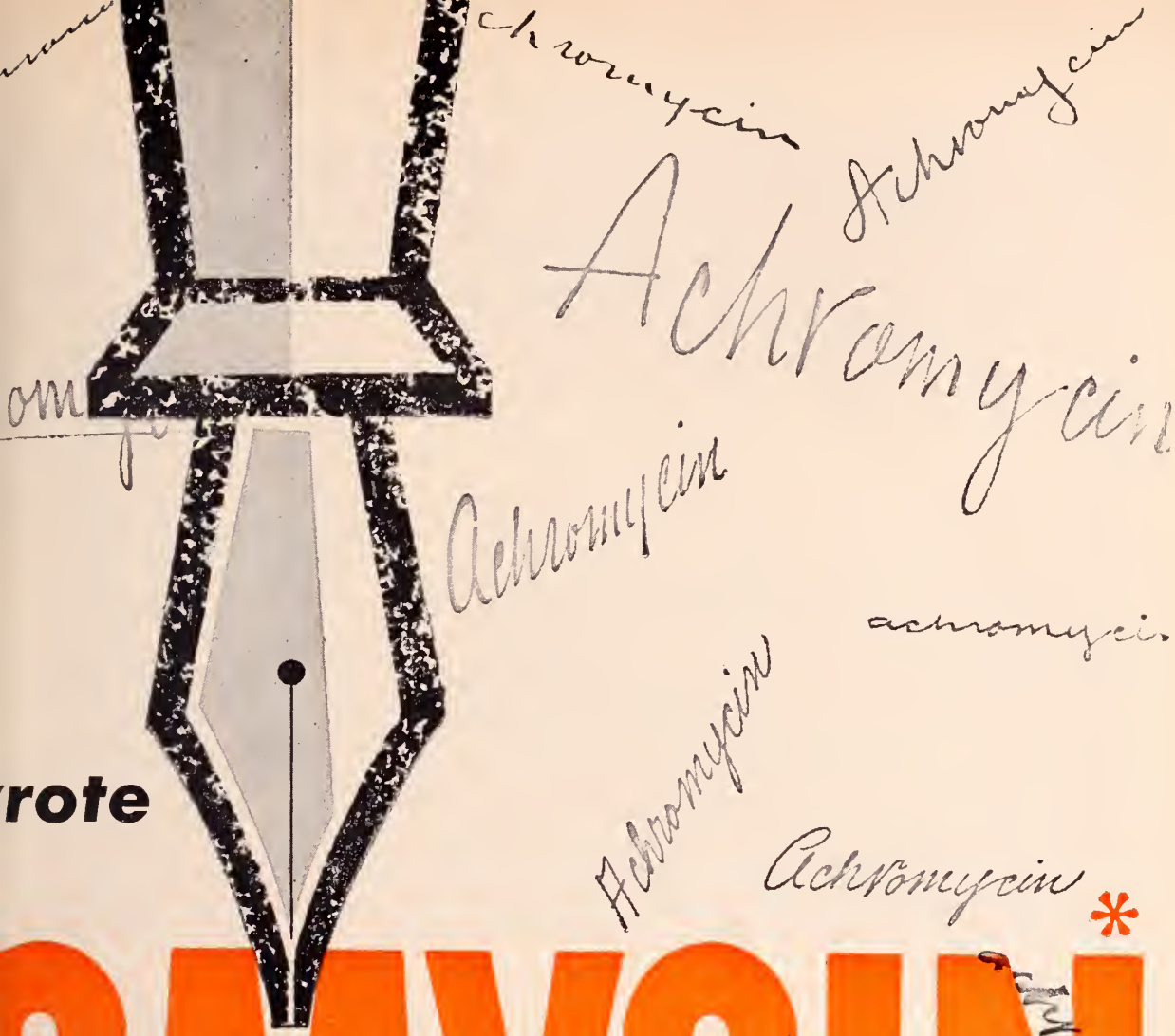
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In a recent study[1] that confirmed previous work[2] Knox Gelatine was used to treat 36 women with fragile, brittle, laminating fingernails. The response was most gratifying. Except for three patients who discontinued the therapy, three diabetics, and two women who had congenital deformities, the splitting ceased and all other patients were able to manicure their nails to a full point by the time the study ended.

Optimal dosage proved to be one envelope (7 grams) of Knox Gelatine administered daily for three months. Improvement, however, was noted after the first month. If you would like more complete details of this work, just use the coupon.

1. Rosenberg, S. and Oster, K. A., "Gelatine in the Treatment of Brittle Nails," *Conn. State Med. J.* **19**:171-179, March 1955.
2. Tyson, T. L., *J. Invest. Dermat.* **14**:323, May 1950.

Chas. B. Knox Gelatine Company, Inc.
Professional Service Dept. SJ-9
Johnstown, N. Y.

Please send me a reprint of the article by Rosenberg and Oster with illustrated color brochure.

YOUR NAME AND ADDRESS

The Low Calorie Diet goes to work!



For your patient who works and eats out, a diet that calls for lamb chops when lamb chops aren't on the menu is an invitation to "slip off." But a diet outline that allows for substitution leaves no excuse. And learning to fill in the details of the outline gives your patient incentive to stick to his diet.

Here's what he should learn—

That a chocolate bar doesn't equal a hamburger—except in calories. An alternative must be equivalent nutritionally as well as calorically.

That fresh fruits and vegetables such as celery and radishes make satisfying between-meal nibbles without adding too many calories.

That spices and herbs, lemon and vinegar, dill pickles and india relish add zest and variety with few or no calories.

Here's what he should do—

Keep a daily record of his calorie count—between-meal snacks included!

At cocktail parties, reach for a radish rose or carrot stick instead of a high-calorie canapé. And choose the drink that lasts a long time.

Keep his diet out of the conversation. Sympathy from friends begets sympathy for himself. And self-pity is death to a diet.

The patient who works out the details of his diet within your outline earns a bonus beyond losing weight. He learns the good diet habits that lead to a well-balanced maintenance diet later. And the pounds he takes off, stay off.

United States Brewers Foundation

Beer—America's Beverage of Moderation

104 Calories/8 oz. glass*

If you'd like reprints of 12 different diets, please write United States Brewers Foundation, 535 Fifth Avenue, New York 17, N. Y.

*Average of American beers

1950 Cortone® | 1952 Hydrocortone®
1954 'Alflorone' | 1955 Deltra®

'Hydeltra' tablets

(PREDNISOLONE, MERCK) 2.5 mg.—5 mg. (scored)

the delta$_1$ analogue of hydrocortisone

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Indications: *Rheumatoid arthritis*
Bronchial asthma
Inflammatory skin conditions

specify

LEDERLE
POLIOMYELITIS IMMUNE GLOBULIN
(human)

Lederle

For the modification of measles and the prevention or attenuation of infectious hepatitis and poliomyelitis.

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November 17 and 18, 1955

This program has been planned for physicians in general practice and will be limited to discussions of roentgen interpretation in the diagnosis of diseases of bones, lungs and the urinary tract.

OCULAR PATHOLOGY
December 5 - 9, 1955

An intensive 5-day lecture and demonstration course in Ocular Pathology. Four hours a day will be devoted to the study of microscopic sections. Bring your own microscope and substage lamp. Course limited to 12 registrants.

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January 16 - 21, 1956

This course will consist of a review of the fundamental principles of water and electrolyte metabolism, as applied to diagnosis and management of practical everyday medical problems. Frequent conferences and discussions at the bedside of patients will be held. This course is designed to cover not only the problems of metabolism but also clinical applications of these principles.

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- Unusually well tolerated and easy to digest because of zero curd tension.
- Assures optimal growth and development, since it contains one-third more protein than does breast milk.
- Reinforced with iron and fortified with vitamins A and D.
- May be prescribed with confidence even for prematures.
- So convenient, easy, and safe to prepare. Simply stir into previously boiled water.

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The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

A natural all-milk formula, Lactogen is modified with milk fat and milk sugar to approximate the fat and carbohydrate composition of breast milk. It is pasteurized, homogenized and spray dried. In addition to supplying one-third more protein than does breast milk, Lactogen is naturally higher than breast milk in vitamin B_6 and is fortified with vitamins A and D and iron. Yet Lactogen provides all these vital nutritional needs at remarkably low cost.

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the delta$_1$ analogue of hydrocortisone

'Hydeltra' tablets

(Prednisolone, Merck)

2.5 mg.-5 mg.

(scored)

'Hydeltra'

Indications:

RHEUMATOID ARTHRITIS

BRONCHIAL ASTHMA

INFLAMMATORY SKIN CONDITIONS

'Hydeltra' offers increased clinical effectiveness . . . lowers the incidence of untoward hormonal effects.

'Hydeltra' is supplied as 2.5 mg. and 5 mg. scored tablets in bottles of 30 and 100.

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HYDELTRA is the trade-mark of Merck & Co., Inc. for its brand of prednisolone, supplied through Sharp & Dohme, Division of Merck & Co., Inc.

Abdominal tenderness

—usually confined to the lower quadrants and at times found only over the cecum—is the most frequently appearing physical manifestation of amebiasis.[1]

KOHN[2] gives a simple, quick method for identifying Endamoeba histolytica in the feces. A small amount of feces is first dispersed in saline solution. If the feces are formed and amebic cysts are likely to be present, solution 1 is used (1 cc. liquefied phenol, 0.6 cc. glacial acetic acid and 50 cc. distilled water). When feces are fluid and vegetative forms are suspected, solution 2 is substituted (0.9 cc. liquefied phenol and 50 cc. distilled water). Two or three drops of the proper reagent are placed on the slide and a loopful of the feces-saline dispersion is added; a cover-glass is applied. The solutions afford a rapid means of differentiation by changing the refractive index of the cells. When the reagent for identifying cysts is used, chromatoid bodies in the cells stand out clearly as rods, bars or short spindle-shaped bodies. Solution 2 outlines details of the nuclear structure, vacuoles and ingested material in the trophozoites.

- ***For nondysenteric colonic amebiasis*—MILIBIS®**

  1 tablet 3 times a day for from 7 to 10 days is most commonly used and "has an efficiency of nearly 80 per cent."[3]

- ***For hepatic amebiasis*—ARALEN® phosphate**

  2 tablets daily for from 2 to 3 weeks—"because of the toxicity of emetine and because of the efficiency of chloroquine [Aralen], chloroquine has taken the place of emetine as the drug of choice."[3]

SUPPLIED: Milibis—tablets of 0.5 Gm.
Aralen phosphate—tablets of 0.25 Gm.

Winthrop-Stearns INC. NEW YORK 18, N. Y. • WINDSOR, ONT.

Milibis and Aralen, trademarks reg. U.S. Pat. Off., brand of glycobiarsol and chloroquine, respectively.

1. Martin, G. A., Garfinkel, B. T., Brooke, M. M., Weinstein, P. P., and Frye, W. W.: *J.A.M.A.*, 151:1055, Mar. 28, 1953.
2. Kohn, J.: *Jour. Trop. Med.*, 53:212, Nov., 1950.
3. Information Please: *GP*, 4:91, Sept., 1951.

continuing
confirmation
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for therapy and prophylaxis of infection—in premature and newborn babies—in infants and older children
as ". . . a valuable adjunct to competent management of the infections of childhood."*
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*Farley, W. J.: Oxytetracycline in Pediatrics, Internat. Rec. Med. *168*:140 (March) 1955.

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DELTRA®

tablets

(Prednisone, Merck)

2.5 mg. - 5 mg. (scored)

the delta$_1$ analogue of cortisone

Indications:

Rheumatoid arthritis

Bronchial asthma

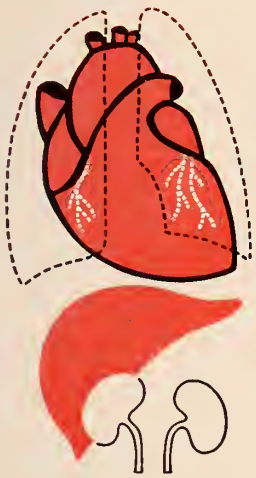
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does your diuretic cause acidosis?

know your diuretic



diuresis without depletion of alkaline reserve—avoiding dangers of acid-base imbalance—is characteristic of the organomercurials. In contrast, the diuretic activity of carbonic anhydrase inhibitors, acidifying salts, and the resins depends on production of acidosis.

TABLET
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BRAND OF CHLORMERODRIN
(18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA IN EACH TABLET)

- action not dependent on production of acidosis
- no "rest" periods... no refractoriness

a standard for initial control of severe failure

MERCUHYDRIN®
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88755

Home Medication...

The direction circular included in all packages of Bayer Aspirin has recently been published in full pages in leading national magazines reaching well over seventy-five million. Quoted below is a prominent paragraph from these directions.

IMPORTANT NOTICE!

The dosages of Bayer Aspirin recommended in these directions are appropriate for the aches and pains that may be treated by home medication. If these dosages do not bring relief and the pain persists, it is an indication that this particular pain is of a nature that requires the attention of a physician. Under these conditions, don't experiment with any other home medications. Consult your physician. He is the only one qualified to diagnose the cause of the persistent pain and prescribe the remedy best suited to your individual needs. This is particularly true of continuing severe pains of Arthritis, Rheumatism, Sciatica, Bursitis and Neuritis.

THE BAYER COMPANY DIVISION
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Protective demulcent gel Anticorrosive antacid gel

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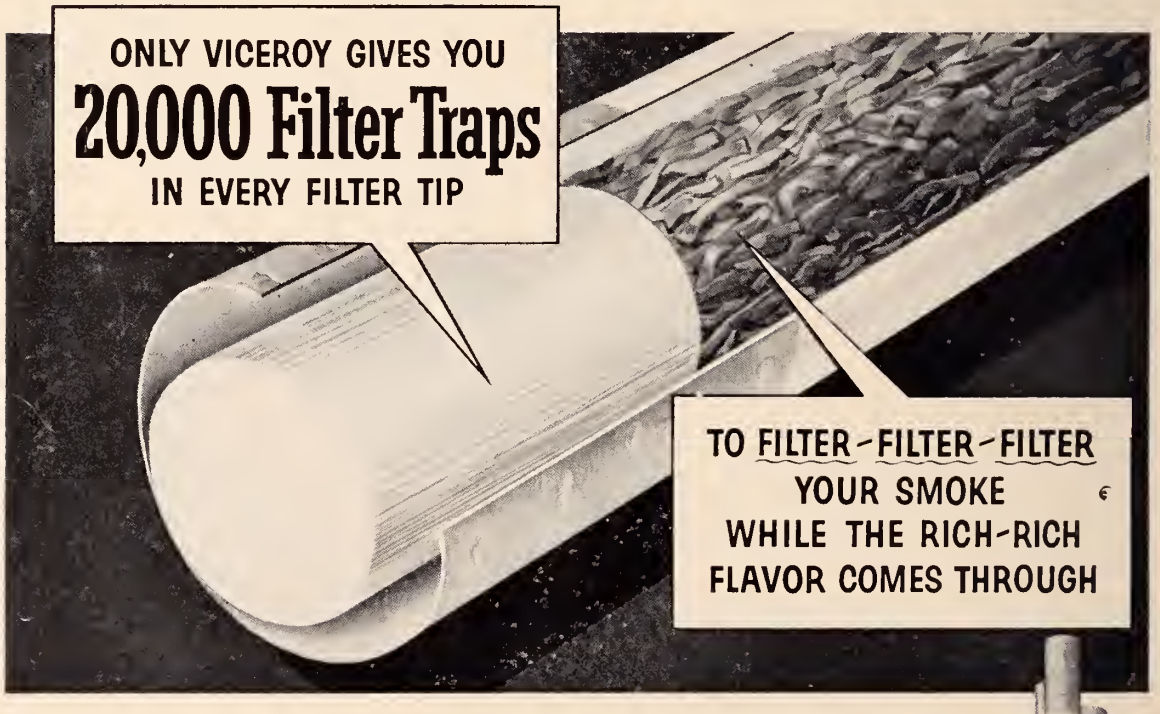
Aluminum Hydroxide Gel

Wyeth®
Philadelphia 2, Pa.



DOCTOR, here's a question and an answer you may find useful when patients ask about cigarettes:

What do Viceroys do for you that no other filter tip can do?



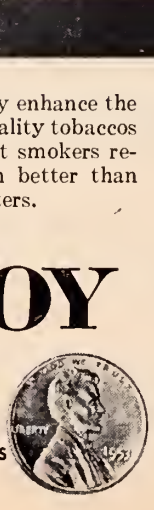
These filter traps, doctor, are composed of a pure white non-mineral cellulose acetate. They provide maximum filtering efficiency without affecting the flow of the smoke.

And, in addition, they enhance the flavor of Viceroy's quality tobaccos to such a degree that smokers report they taste even better than cigarettes without filters.

King-Size Filter Tip **VICEROY**

WORLD'S MOST POPULAR FILTER TIP CIGARETTE

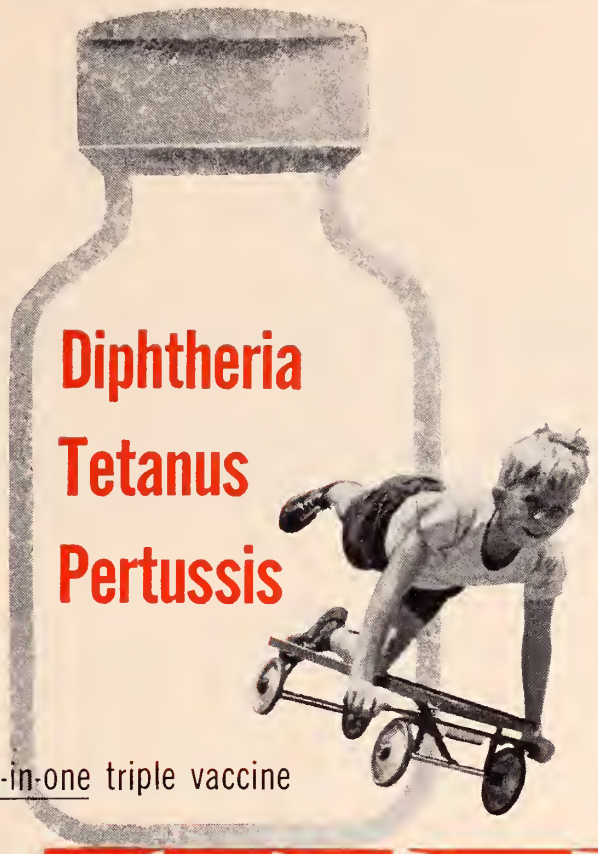
ONLY A PENNY OR TWO MORE THAN CIGARETTES WITHOUT FILTERS





for routine protection of children from

Diphtheria
Tetanus
and Pertussis



give this superior, three-in-one triple vaccine

DTP

NATIONAL

Accepted by The Council on Pharmacy and Chemistry
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- highly concentrated
- 99% of non-specific protein removed
- maximal antigenicity

Supplied: Single and in five immunization packages
of Diphtheria and Tetanus Toxoids
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Also available: DTP (Plain): without alum
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for first consideration in hypertension

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Squibb Whole Root Rauwolfia

- Raudixin produces a gradual, sustained hypotensive effect which is usually sufficient in mild to moderate cases.
- Raudixin has a mild bradycrotic effect, helping to ease the work load of the heart.
- The tranquilizing effect of Raudixin is often of great benefit to the hypertensive patient.
- Tolerance to Raudixin has not been reported.
- In severe cases, Raudixin may be combined with more powerful drugs. It often enhances the effect of such drugs, permitting lower dosages.
- Raudixin supplies the *total* activity of the whole rauwolfia root.
- Raudixin is accurately standardized by a series of rigorous assay methods.

DOSAGE: 100 mg. b.i.d. initially; may be adjusted as necessary.

SUPPLY: 50 and 100 mg. tablets, bottles of 100 and 1000.

SQUIBB

"RAUDIXIN"® IS A SQUIBB TRADEMARK



in arthritis
and
allied disorders...

nonhormonal anti-arthritic

BUTAZOLIDIN®

(brand of phenylbutazone)

relieves pain • improves function • resolves inflammation

Employing the serum protein-polysaccharide ratio (PR) as an objective criterion of rheumatoid activity, it has again been shown that BUTAZOLIDIN "...produces more than a simple analgesic effect in rheumatoid arthritis."[1]

Clinically, the potency of BUTAZOLIDIN is reflected in the finding that 57.6 per cent of patients with rheumatoid arthritis respond to the extent of "remission" or "major improvement."[2]

Long-term study has now shown that the failure rate with BUTAZOLIDIN in rheumatoid arthritis, and particularly in rheumatoid spondylitis, is significantly lower than with hormonal therapy.[3]

(1) Payne, R. W.; Shetlar, M. R.; Farr, C. H.; Hellbaum, A. A., and Ishmael, W. K.: J. Lab. & Clin. Med. 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: J. Chron. Dis. 1:168, 1955. (3) Holbrook, W. P.: M. Clin. North America 39:405, 1955.

BUTAZOLIDIN® (brand of phenylbutazone). Red coated tablets of 100 mg.

BUTAZOLIDIN being a patent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before instituting therapy.

GEIGY PHARMACEUTICALS Division of Geigy Chemical Corporation
220 Church Street, New York 13, N. Y.
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51155

Geigy

THERAPEUTIC BILE

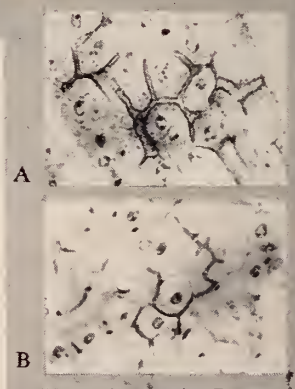
for patients with liver and gallbladder disorders

confirmed in the laboratory

In the isolated perfused liver (rat), *hydrocholeresis* with *Decholin Sodium* increases bile flow 200 to 300 per cent—*with no increase in total solids.*[2]

(A) *Hydrocholeresis*: Bile capillaries (rabbit liver) are filled with dilute bile 15 minutes after i.v. injection of sodium dehydrocholate.

(B) Untreated control.



Photomicrographs Demonstrate *Hydrocholeresis*: Increased Secretion of Highly Dilute Bile[1]

confirmed in practice

"true hydrocholeresis —a marked increase both in volume and fluidity of the bile"[3]

"Since bile of this nature and in this large output can flush out even the smaller and more tortuous biliary radicles, hydrocholeresis [with *Decholin* and *Decholin Sodium*] aids in removal of inspissated material and combats infection."[3]

Decholin®—Decholin Sodium®

Decholin Tablets (dehydrocholic acid, *Ames*) 3¾ gr. (0.25 Gm.). *Decholin Sodium* (sodium dehydrocholate, *Ames*) 20% aqueous solution: ampuls of 3 cc., 5 cc. and 10 cc.

(1) Clara, M.: Med. Monatsschr. 7:356, 1953. (2) Brauer, R. W., and Pessotti, R. L.: Science *115*:142, 1952. (3) Schwimmer, D.; Boyd, L. J., and Rubin, S. H.: Bull. New York M. Coll. *16*:102, 1953.

63255

AMES COMPANY, INC • ELKHART, INDIANA Ames Company of Canada, Ltd., Toronto

Meat...

and Biologic Facts of Protein Metabolism

The classical work of Cannon and his associates* in the field of protein metabolism has contributed significantly to our knowledge of the biologic utilization of protein. It has established that the dietary absence of a single amino acid quickly changes the direction of metabolic activity from anabolism to catabolism. Apparently all the nonessential amino acids play some part in sparing the essential amino acids, and all may be regarded as indispensable for optimal nutrition. It has been suggested "that for maximal tissue-utilization of amino acids at least twenty per cent of the total dietary nitrogen should come from other sources than essential amino acids."

In undernourished subjects the maintenance requirement for each essential amino acid is much greater—two to almost five times greater—than in healthy subjects.

Although an optimal caloric intake facilitates optimal utilization of amino acids, a reducing regimen need not curtail full utilization of these nutrients. It has been shown that a useful degree of amino acid utilization can be attained with caloric intake considerably below the optimal.

Minerals appear to be important in the process of amino acid metabolism. Evidence indicates that either phosphate or potassium deficiency might adversely influence amino acid utilization. Absence of either ion from experimental depletion rations leads to depression of appetite and slowing of the processes of protein repletion.

B complex vitamins also affect the metabolism of proteins and amino acids. For example, rats fed a high protein diet require a high intake of B complex vitamins in order to maintain normal growth rates. Omission from the ration of any one of these vitamins (riboflavin, thiamine, pyridoxine, or pantothenate) is accompanied, in varying degrees, by lower food consumption and slower weight gain.

Meat of all cuts and kinds is high in its content of protein, and provides well proportioned amounts of essential and nonessential amino acids. Meat also supplies valuable amounts of essential minerals, especially iron, phosphorus, potassium and magnesium, as well as important quantities of all components of the vitamin B complex, thus assuring maximal utilization of the amino acid components.

---

*Cannon, P. R.; Frazier, L. E., and Hughes, R. H.: Factors Influencing Amino Acid Utilization in Tissue Protein Synthesis, in Symposium on Protein Metabolism, New York, The National Vitamin Foundation, Inc., 1954, pp. 55-90.

The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago . . . Members Throughout the United States

1950 Cortone® | 1952 Hydrocortone®
1954 'Alflorone' | 1955 Deltra®

'Hydeltra' tablets
(PREDNISOLONE, MERCK) 2.5 mg.—5 mg. (scored)

the delta$_1$ analogue of hydrocortisone

Indications: *Rheumatoid arthritis*
Bronchial asthma
Inflammatory skin conditions

SHARP & DOHME
Philadelphia 1, Pa.
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PHYSICAL THERAPY EQUIPMENT

If you have only a limited need for Diathermy or Ultra-Sonic Equipment investigate our low cost rental service.

•

MEDICAL X-RAY SUPPLY CO.
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Doctor, when you peruse the advertising pages of our journal, remember this: All ads are carefully screened — the items, services and messages presented are committee-accepted. Our standards are of the highest. The advertisers like our journal — that's why they selected it for use in their promotional program. They seek your patronage and your response encourages continued use of our publication. In turn, the advertisers' patronage helps us to produce a journal that is second to none in our state. When you send inquiries, tell them that you read their advertisement in The Journal of the Louisiana State Medical Society.

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The Cancer Commission of the Louisiana State Medical Society

CANCER REGISTRIES*

Cancer registries provide case histories which form the invaluable statistical core of the American Cancer Society's research and control programs. Beginning January 1, 1956, hospitals having facilities such as cancer clinics or diagnostic clinics which are approved by the American College of Surgeons must keep cancer registry records on *all* cancer patients diagnosed and/or treated in the hospital—whether or not the patient comes under the direct surveillance of the cancer facility. The American College of Surgeons also will add hospital cancer registries to its classification of facilities for which approval may be requested.

* From CANCER NEWS, Vol. IX, No. 3



Louisiana State Department of Health

S. J. Phillips, M.D., M.P.H.

State Health Officer

for strong, sturdy, solid growth

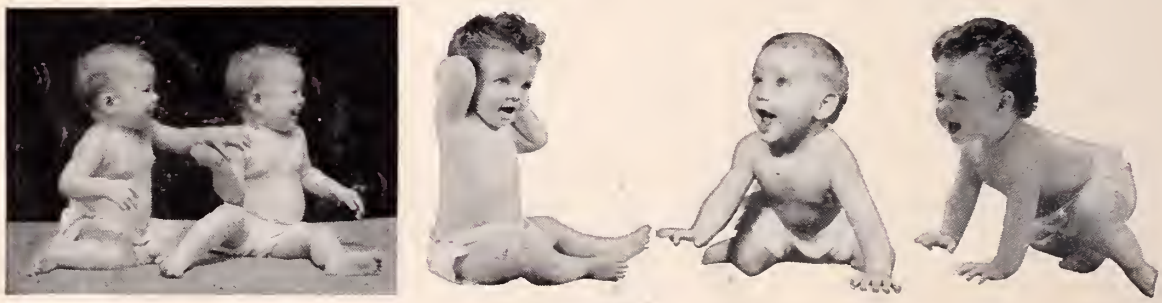
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OCTOBER, 1955

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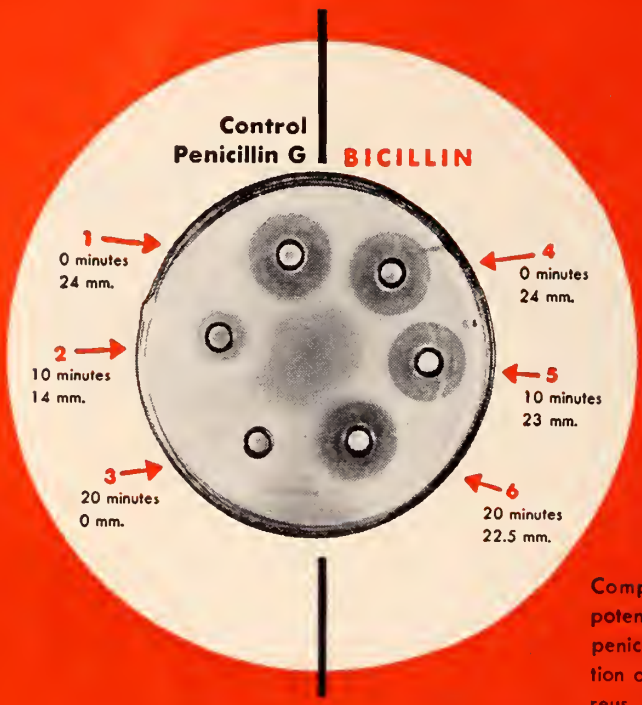
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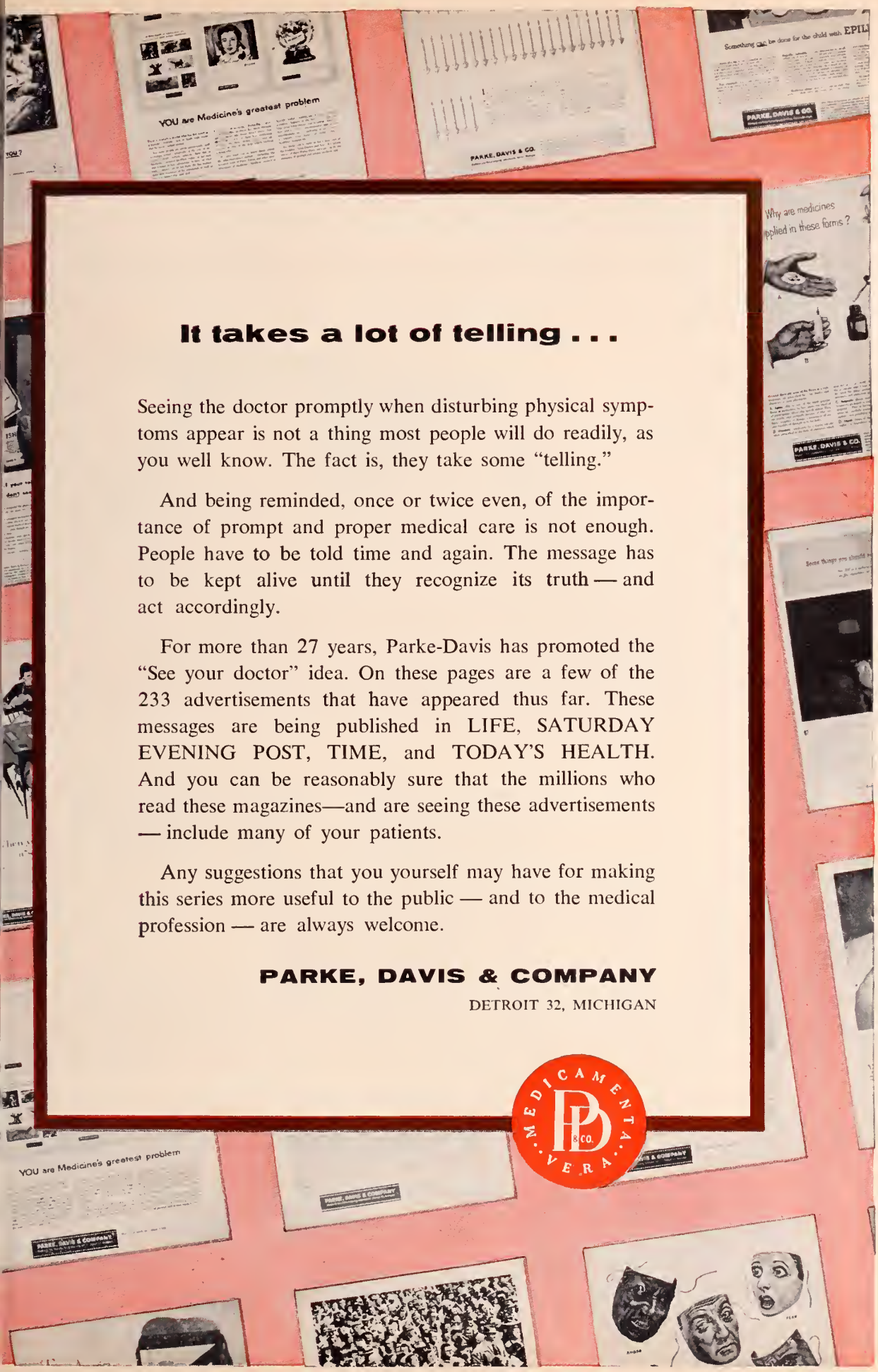
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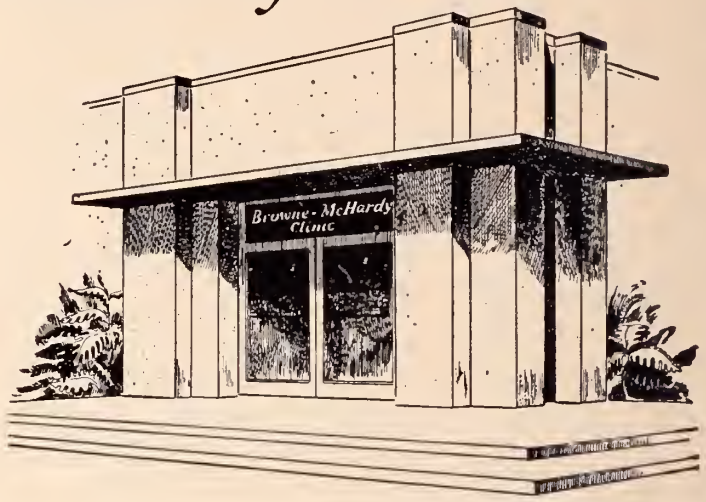
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Cations	**Average Normal**	**Anions**	**Average Normal**
Sodium	326.0 mg%	Bicarbonate	60.5 vol%
Potassium	20.0 mg%	Chloride	365.2 mg%
Calcium	10.0 mg%	Phosphate	3.4 mg%
Magnesium	3.6 mg%	Sulphate	1.6 mg%
		Organic Acid	21.0 mg%
		Protein	6500.0 mg%
	359.6 mg%	DOES NOT EQUAL	6951.7 mg%

The above is not correct, since the cations must equal the anions for electrical equality. But, on the basis of the milliequivalent per liter system, then

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K	5 mEq/L (4.1-5.6)	Cl	103 (100-107 mEq/L)
Ca	5 mEq/L (4.5-5.5)	HPO_4	2
Mg	2 mEq/L (1.4-2.4)	SO_4	1
		Organic Acid	2
		Protein	16
Total Cations	150 mEq/L EQUAL	Total Anions	150 mEq/L

If there is a decrease or increase in total cations (total base), there must be a corresponding decrease or increase in the total anions (total acid) and vice versa, for example: if total base is 140, total acid is 140; if total acid is 160, total base is 160.

Conversion of milligrams to milliequivalents:

$$\frac{\text{milligram/100 ml} \times \text{valence of element} \times 10}{\text{Atomic weight of element}} = \text{milliequivalent/Liter}$$

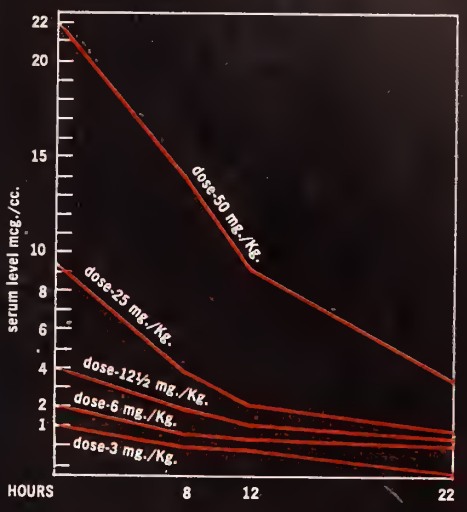
Example: $\frac{10 \text{ mg calcium} \times 2 \times 10}{40} = \frac{200}{40} = 5 \text{ mEq/L}$

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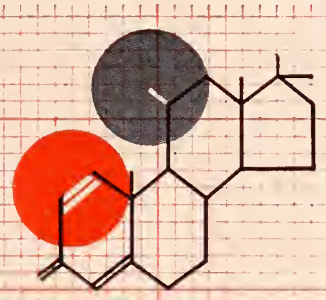
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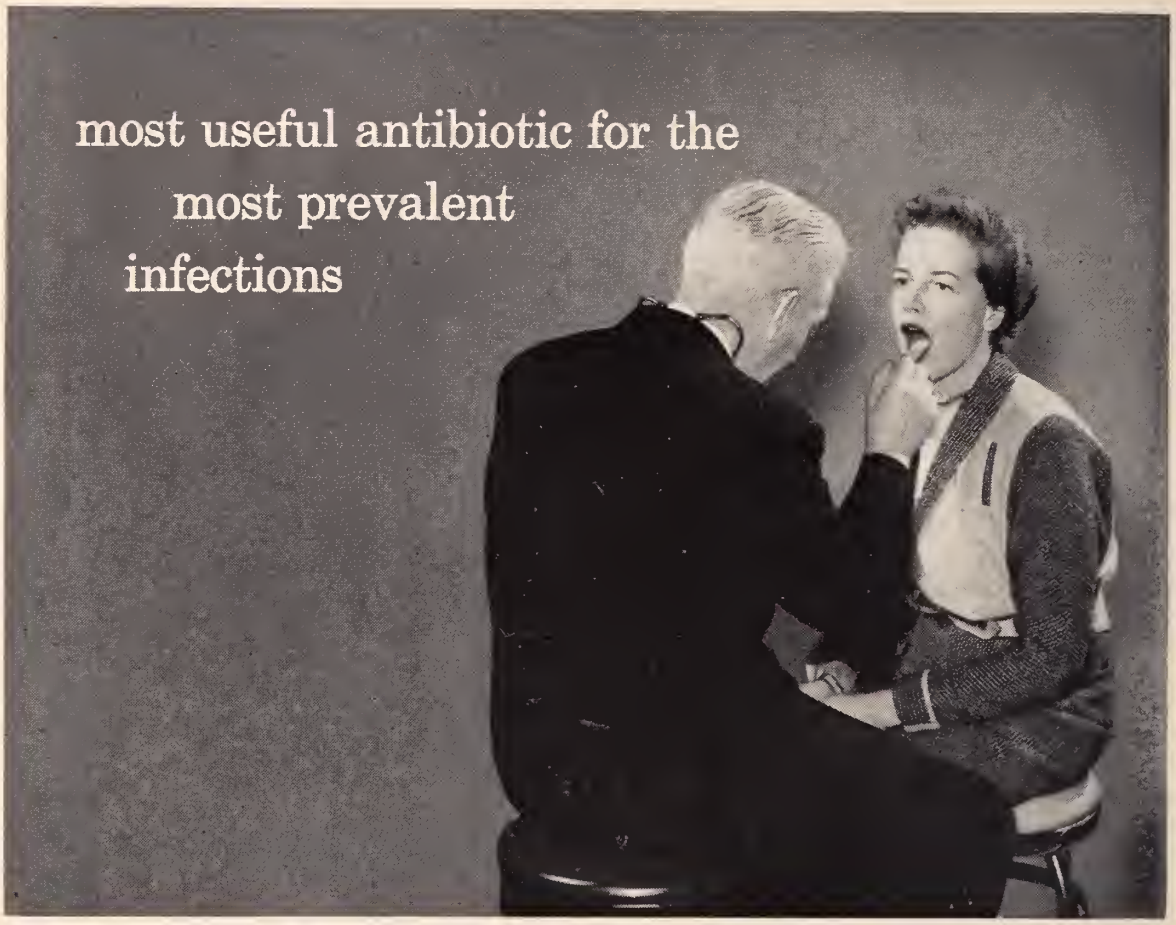
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OCTOBER, 1955

Published Monthly
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THE SURGERY OF ACUTE CHOLECYSTITIS *

MORTON J. TENDLER, M. D. †
MEMPHIS, TENNESSEE

The present status of surgery in acute cholecystitis is a culmination of three decades of profound controversy. In 1923, Walton [80] first urged early surgical treatment, rather than delay, in all cases of acute cholecystitis. He cited the remarkable, rapid postoperative convalescence. The following year, Bland-Sutton [10] stated all cases should be operated upon immediately, saying it was "reprehensible" not to remove the acute gall bladder. Again, in 1924, Kirschner [45] advocated early operation because he believed surgery was easier, and that the patient was indeed more willing to be operated upon during the attack. Kirschner's philosophy may well be compared with the long prevailing attitude in strangulated hernia and acute appendicitis. In the United States, George Crile, quoted by Bruggeman [16] in 1928, stated he was greatly impressed by his excellent results with cholecystectomy in acute disease. In the same paper Leriche and Cotte also urged that cholecystectomy should be done immediately, Bruggeman asserting that French surgeons generally advise immediate operation.

During the same period the hue and cry of the opposition—urging delay—voiced by Enderlin and Holtz,[27] in Germany, Lyons and Judd [51] in this country, followed by Deaver [21] and Evarts Graham,[36] did not deter those who had been convinced by their good results. The imposing array of opposition contended that most acute cholecystides subsided without complications and that perforation was rare. If one awaited abatement of the acute process, surgery could be undertaken from three to six weeks after recovery, with a lower mortality rate.

There soon were published, in this country, a number of papers, Alexander,[1] Miller,[58] H. F. Graham and Waters,[37] Heuer,[40] Mentzer,[56] Lobingier,[50] Mentzer,[57] Zinninger,[85] Judd and Phillips,[44] Smith,[71] Stone and Owings [72] to substantiate the earlier advocates of immediate and early cholecystectomy. Alexander's series revealed that in 20 patients who were carefully observed and treated medically, perforation had occurred. There was a mortality of 50 per cent. Mentzer (1932) presented 8 patients, undergoing medical therapy, all of whom died. Thirty-one patients, also undergoing prolonged medical treatment, advanced to perforation or gangrene before surgery was performed. The mortality in this group was 33 per cent. Zinninger's elaborate study showed that in his patients, operated upon within forty-eight hours after onset, there was no mortality. Those operated upon within two to five days, the mortality was 6.6 per cent. In those acute cholecystides operated upon after five days the mortality rate increased to 25 per cent. Probably the best of the early papers was

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 4, 1955.

† From the Departments of Surgery, Baptist Memorial Hospital and The University of Tennessee College of Medicine, Memphis, Tennessee.

George Heuer's review in 1937 [41] in which he presented 153 cases of acute cholecystitis operated upon by him. Of this number, 65 per cent were operated upon within twenty-four hours, 35 per cent within seventy-two hours. In his entire series there were 5 deaths, a mortality rate of 3.2 per cent. In this series 40 of the 153 gall bladders showed areas of gangrene, and in 16 of these the gall bladder was perforated on admission. His critical analysis of his own series reveals there were 137 cases of acute cholecystitis without perforation with 3 postoperative deaths—a mortality rate of 2.1 per cent. In the 16 cases with perforation there were 2 deaths—a mortality rate of 12.5 per cent.

The recent surgical literature, 1940 to 1955, has produced a great number of excellent articles which sustain the pioneers' efforts to establish early cholecystectomy as the operation of choice in acute cholecystitis, especially Glenn,[31-35] Dunphy, Ross et al.,[25, 67, 68] Wallace and Allen,[78] Clifford,[19] Eliason and Stevens,[26] Lester [47] and Best.[8] An excellent dissertation on acute noncalculous cholecystitis and its pathology is found in Wolfson and Rothenberg's paper.[84] The most enlightening and substantiating review of the pathology in acute cholecystitis was presented in a clinical paper on the subject by Touroff.[76] Recently (1952), an exhaustive article on the subject of timing in surgery of acute cholecystitis was published by DeCamp, Ochsner et al.,[22] substantiating Ross, Boggs and Dunphy.[68] In 1953, Frank and Orr [30] again emphasized the philosophy of the two latter groups, stating that "operation is indicated *as soon as the patient can be prepared,* providing the diagnosis is reasonably well established and there are no serious contraindications to surgery". Pines and Rabinovitch [62] (1954) review 1480 patients operated upon for acute cholecystitis with 6.5 per cent mortality in uncomplicated cases. Where perforation has occurred the overall mortality rate was 17.7 per cent. This paper presents an excellent statistical summary of the literature on perforations of the gall bladder. Their large series of patients (1480) were gathered from the records of the Brooklyn Jewish Hospital from 1932 to 1952—a large general hospital with many resident staff operators as well as those of the active attending surgical staff. They conclude that "the *optimum time for surgery* is often missed because patients are not hospitalized nor operated upon until many days after the onset of symptoms—in the authors' series, *more* than ten days".

It is most significant at this time to note that the internist has been following his patient to the operating room and has drawn his own conclusions, as he had done in acute appendicitis with its controversies in the 1890 to 1910 period, and in strangulated hernia in the 1870 to 1890 period. J. Edward Berk,[7] Associate Professor of Medicine, Wayne University, Detroit writes—"If during the first 24 or 36 hours, the temperature and pulse rate continue to mount, the local signs of inflammation increase, and the leukocyte count shows progressive elevation, operation is no longer delayed. Similarly, if after 36 to 48 hours, the temperature has not significantly lowered, the pulse rate remains rapid, the abdominal signs are essentially unchanged, the white blood count is still elevated, and the patient generally appears unimproved, operation is no longer delayed. The operative procedure of choice is cholecystectomy, with or without common duct exploration as indicated by the history and operative findings. When the findings at the time the patient is initially seen suggest perforation or imminent perforation, surgical intervention is elected with the least possible delay".

PATHOGENESIS

Acute cholecystitis occurs with and without the presence of gall stones. Acute noncalculous cholecystitis is often the result of the invasion of the wall of the gall bladder through the lymphatics of the liver (Graham et al [36]), or hematogenous bacterial infection (Rosenow,[66] Rehfuss and Nelson[64]). Boyd [12] states that ascend-

ing infection from the duodenum does not occur. Pancreatic reflux, with its necrotizing effect, has been reported in cases of acute noncalculous cholecystitis by Colp and Doubilet[20] and Bisgard and Baker.[9] An embolus or an atheromatous intima of the cystic artery, or torsion of the cystic duct may produce gangrene of the gall bladder. Wolfson and Rothenberg found 31 cases of noncalculous cholecystitis in a series of 279 patients with acute cholecystitis—a percentage of 8.2. Allen Whipple[82] in a series of 160 patients found 30 without stones, or 18.7 per cent. Infection produces inflammatory swelling of the lining of the gall bladder and the cystic duct. This swelling produces obstruction at the ampulla or duct, and the ensuing pathological process is similar to that which produces the same sequence of events in stone impaction of the ampulla or duct.

Strohl and Diffenbaugh[73] reported 118 cases of acute cholecystitis in which 85.6 per cent contained stones. Numerous reports to date indicate that the cause of acute cholecystitis is due to obstruction of the ampulla or cystic duct in at least 95 per cent of cases.

The most common sequence of events follows when small stones may become impacted in the cystic duct, or a larger one in the ampulla, obstructing the outflow of bile (Figures 1 and 2). It should be noted that there are four vascular systems, or their components, involved in the mechanics of obstruction in the acute gall

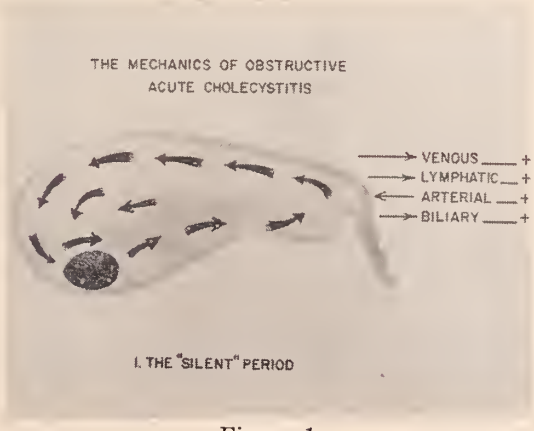


Figure 1

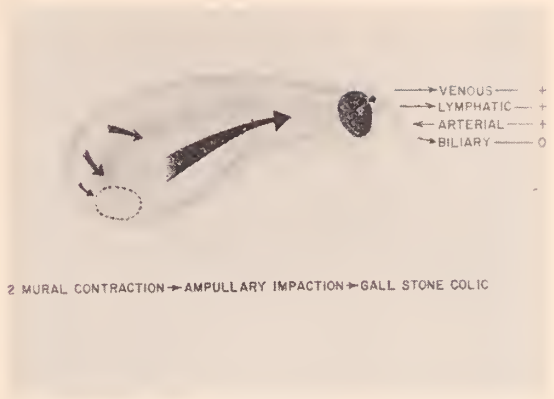


Figure 2

bladder: (1) the biliary components, the ampulla of the gall bladder and the cystic duct and the flow of bile to and fro; (2) the arterial component, the cystic artery—acts as it were a true end-artery despite the numerous gall bladder fossa capillaries, (The artery is usually single but may be multiple); (3) the venous components, the cystic vein which empties into the right branch of the portal vein and minute radicals which may empty into the liver; (4) the lymphatic components, the main vessels of which empty into the nodes at the neck of the gall bladder. (Figure 1).

With the impaction of the stone in the ampulla (surgically, Hartmann's pouch) or cystic duct the outflow of bile ceases—thus setting up, in a very small and restricted area, (about the triangle of Calot, especially) a progressive compromising of the circulation of blood and lymph in the entire gall bladder wall. All major portals of egress and ingress are confined to an area of 3 cm. generally about the ampulla. With the development of spasm and edema about the wall of the ampulla and the cystic duct, the lymphatic return and the venous outflow are first to become slowed and may eventually cease (Figure 3). As seen so frequently at surgery of the acute gall bladder the cystic artery seems to be the villain of the play. It becomes distended, larger, bounding, and is frequently seen to pulsate. It is not infrequently as large as the radial artery in the fulminating picture. Since it seems to act not unlike an end-artery, the blood continues to

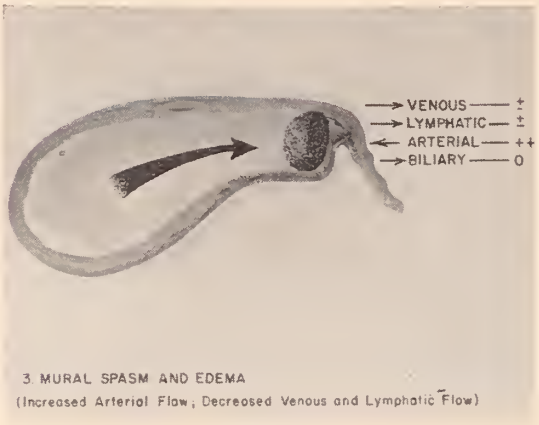


Figure 3

pour into capillaries of the viscus; edema, subserous, mural, as well as submucosal, is progressive due to lymph stasis; venous congestion due to venous block, with its concomitant hypoxia, plus inflammatory changes in the mucosa, submucosa, the Rokitansky-Aschoff sinuses; destruction of capillary walls with its diapedesis of red cells as well as frank hemorrhage into the interstices; focal areas of necrosis begin to appear in the wall. It could be explained as a problem in hydrostatics, with the capillary bed and its delicate walls, the site of initial disruption. The earliest areas of ischemic necrosis are more frequent in the fundus, farthest from the ampulla, where the blood supply has been further compromised by greatly increased intracystic tension and pressure. It is thinnest in this area also. Ruptures are most frequent here. However, blotches of gangrene may be found in various stages of progress throughout the entire wall (Figure 4).

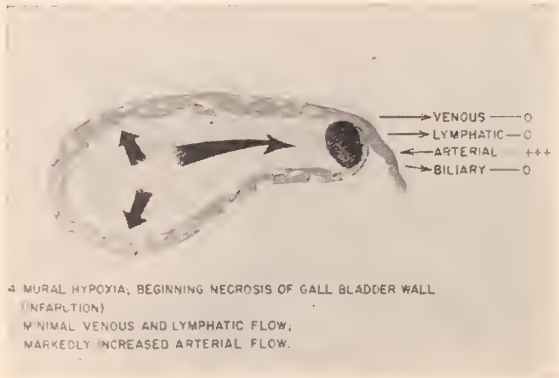


Figure 4

Figures 1 through 4 are representative of culminating ideas gathered from the surgical and pathological literature, inspired mainly by Lobingier,[50] Homans,[42] Denton,[23] Andrews,[2] Hallendorf, Dockerty and Waugh[38] and others. The entire sequence can be likened to that produced by the torsion of an ovarian cyst pedicle; acute obstructive appendicitis (Van Zwalenberg,[77] McCallig[52]); volvulus of the sigmoid or small bowel, or as seen rarely in torsion of the mesentery of a ptotic gall bladder. How many acute cholecystitides have resolved, completely or partially, due to abnormal and or accessory veins, or accessory arterial systems, can only be conjectured. The unusual number of abnormalities in the "cysto-hepatic angle" (Moosman and Coller,[59] Browne,[15] Flint,[28,29] Brewer[14] et al.) should render unlikely only one mechanical process as all prevailing. The rich network of fine lymphatic radicles between the liver bed and the gall bladder wall may be considered as another good "escape hatch". The question of bacterial inflammatory complications of the picture cannot be dismissed as an entirely negligible factor. Various pathogens have been cultured from the fundic bile, as well as the wall, by many. The main groups are streptococci, staphylococci, the anaerobes (especially *C. Welchii*) and various members of the *E. Coli* family. (Rosenow,[66] Magner and Hutcheson,[55] Graham, et al.[36]). Andrews[2,3] believes that bacteria play only a minor role in the great majority of the acute cholecystides. McKibbon and McDonald[53] support his view, and point out that polymorphonuclear leukocytes are frequently present in one or more layers of the gall bladder wall of apparently normal gall bladders. Andrews, Schoenheimer and Hrdina[3] ligated the cystic duct and the common duct producing biliary stasis, showing that infection of the gall bladder wall by anaerobic organisms, which seemed to pass from the liver to the gall bladder by direct extension, occurred in their experiments. The anaerobic organisms found in many cases of cholecystitis correspond to the normal flora of

the liver, which is intestinal in origin. A review of *E. Coli* septicemia due to acute cholecystitis was presented by Lipshutz and Kaplan[49] in 1941. They report 12 cases, 3 personal and 9 from the literature to 1941.

In comparing inflammation in the gall bladder with inflammation in other hollow abdominal organs, such as the appendix or the urinary bladder, one finds striking differences. In the appendix, and in the urinary bladder, there is a close correlation between the pathological changes and the clinical symptoms, and bacteria are present in enormous numbers. In acute cholecystitis the histological picture is rarely one of acute suppuration—and one finds very little difference, as a rule, between the bacterial count of acute and chronic cholecystides. Moreover, the clinical picture in early acute cholecystitis and late, so-called subsided acute cholecystitis, rarely corresponds to the pathological picture. As Touroff so vividly pointed out in his series, 99 per cent of the patients operated upon after symptoms were minimal or absent, still showed acute cholecystitis histologically for periods as long as three years after the acute clinical episode had subsided. Many authors have commented on similar observations. It is not too rare to find the pathologist's report on a so-called elective operation upon chronic cholecystitis with cholelithiasis revealing "acute diffuse cholecystitis with cholelithiasis".

THE DIAGNOSTIC PICTURE

Most patients with acute cholecystitis fall within the 30 to 60 year old group. Acute cholecystitis in childhood is relatively rare, but in 1938, Potter[63] reported 432 cases from the literature, of biliary disease in the young (under 15 years of age), two-thirds of which were acute cholecystitis and chronic cholecystitis with cholelithiasis.

A history of previous attacks is often noted, in the majority of cases, but usually less severe than the presenting attack. A sudden onset of severe localized pain in the right upper quadrant usually initiates the attack. However, the onset may be gradually noted, with epigastric or periumbilical pain, soon localizing over Mayo-Robson's point. Radiation of pain may vary—to the right costo-vertebral angle, the right scapula or right interscapular space (splanchnic nerve distribution) or to the right shoulder. Anorexia is an early symptom, as is nausea. Most patients vomit—and vomiting is often incessant. Chills are a danger sign—indicating early gangrene or perforation. In older patients a clear cut history is not the rule, but the exception. Patients in the decades past 50 years present the most trying problems in diagnosis. This is becoming more and more important. In a series of 586 patients Glenn and Moore[32] reported 35 per cent over 50 years of age.

Physical examination usually reveals an acutely ill and apprehensive patient. Fever is usually low grade though many patients are afebrile. Fever cannot be relied upon to correlate the extent of the underlying disease or its pathological state (Bockus[11]). The pulse usually parallels the temperature rise. Precipitous rise, to 103-105°, means gangrene and/or perforation has occurred.

Tenderness and increased muscle tone in the right upper quadrant is almost always present. Mass is found in 15 to 25 per cent of patients. Even the rounded fundus of the enlarged gall bladder may be palpated or outlined by delicate percussion. The mass usually consists, however, of an intraperitoneal walling off process—the stomach and duodenum, transverse colon, and hepatic flexure, and omentum, mainly.

Jaundice, as a presenting sign indicates a serious complication, found in 10 to 20 per cent of statistical studies. Spreading inflammatory edema extending to the common bile duct or common hepatic duct, or stones or gravel in the common duct are the most common causes. Greatly enlarged lymph nodes along the common duct have been found to be the sole cause upon rare occasions.

The leukocyte count is often indicative of the severity of the disease process, especially under 50 years of age. Most

counts fall between 10 and 15,000. Past 50 years of age, white counts, like the temperature rise, are often misleading. Normal counts often go along with normal or subnormal temperature in the older age groups. Counts higher than 15,000 with pronounced shifts to the left often mean impending or actual gangrene and or perforation.

The urine may show bile, and, on occasion, sugar in nondiabetics, because of pancreatic involvement. Proteinuria, granular and hyaline casts amongst the formed elements are not unusual, especially with marked fever rises.

The serum bilirubin should be determined, whenever possible, preoperatively, to detect not only subclinical jaundice but also, in jaundiced patients to follow postoperative progress.

The color of the stools should be noted for acute biliary obstruction, complete or partial.

The color of the vomitus, particularly of prolonged vomiting, is an indicator of the presence or absence of duodenal bile.

A good routine procedure to be recommended is a scout film of the abdomen (K.U.B.). Not only may it show radiopaque stones or calcific gall bladder walls but also gas in the gall bladder fundus or biliary tree. Bell, Brown and Lenhardt[6] report 27 clinically proven cases of pneumocholecystitis up to 1953. An amazing 46 per cent in 121 cases of acute cholecystitis, proven at surgery, revealed a positive x-ray for radiopaque stones preoperatively, was reported by Smith[70] from the Presbyterian Hospital, New York (1945).

DIFFERENTIAL DIAGNOSIS

Fortunately, the diagnosis of acute cholecystitis in the hands of most practitioners of medicine and surgery has not proved to be too great a stumbling block. The usual clear cut history, so often laden with typical though mild acute attacks of pain in the right upper quadrant, selective food disturbances, pyrosis, colic and classical reflex pain distributions, outlines the diagnosis before the patient is examined. The well localized pain, muscle spasm, and marked resistance plus exquisite tenderness in the region of Mayo-Robson's point aid in arriving at a diagnosis within six to twenty-four hours after onset.

Though there are pitfalls, such as ruptured peptic ulcer, acute pancreatitis, late perforative appendicitis, right sided diaphragmatic pleurisy, lobar pneumonia, hiatus hernia, they are rather infrequent in large series. High intestinal obstruction, though rare, may mimic acute cholecystitis. Linder and Morse[48] present an extensive differential picture, quoted almost in toto by Thorek,[75] concerning acute pancreatitis.

The most intriguing of errors, from the viewpoint of the experienced internist and the surgeon is often found in the relationship between coronary artery disease and the affected gall bladder. The literature is abundant on the subject, since Babcock[4] reported 13 cases in 1909. As long ago as 1878, de Mussy[60] called attention to this frequently found association. That gall bladder disease could cause cardiac signs and symptoms, producing anginal pain and even toxic effects, along with inverted or flat T-waves in the electrocardiogram, have been shown by Breitweiser,[13] Cady et al.[17] and Weiss and Hamilton.[81] Walters and Master[79] believe that following cholecystectomy for acute cholecystitis, or for gall stones, the cardiac condition may be improved. The acute anginal pain and other cardiac symptoms may disappear, as may also the abnormal electrocardiographic changes. However the underlying disease of the coronaries is not affected by such surgical procedures. They state that "since both conditions often occur in the same age group, and since both may have a common etiologic basis (vagovagal reflex, atherosclerosis) their frequent association is probably coincidental".

To the surgeon, as well as the physician, it is extremely important to differentiate between acute cholecystitis and acute coronary occlusion, for surgery could prove disastrous. Wolferth[83] shows that there should be little difficulty in distinguishing between the pain of gall bladder colic and

angina pectoris if a careful history has been taken. As is well known, epigastric pain may occur with angina pectoris; invariably, however, anginal pain radiates under the sternum and often to the shoulders and down the left arm. It does not tend to radiate to the subscapular region. It is usually of a characteristic pressing or clutching quality, and is hardly ever centered in the right upper quadrant of the abdomen. With actual coronary occlusion or infarction the patient appears more critically ill,— pallor, even cyanosis, difficulty in breathing, with substernal pain are much more marked than abdominal pain. Fever, leukocytosis, rapid pulse are soon manifest. Because of the frequent association of the two diseases due deliberation and caution are paramount in deciding the issue of surgery or watchful waiting.

THE SEQUELAE OF AMPULLARY OR CYSTIC DUCT OBSTRUCTION

The passage of a relatively small calculus through the tubular structure of the ureter causes much pain and spasm. That there is an inflammatory reaction accompanying the passage is well manifested by the outpouring of red and white cells. The inflammatory edema and spasm in the cystic duct and its passing stone, with the additional obstructive hurdle of the valves of Heister, presents a similar pathological picture. With a large stone impacted in the ampulla or in Hartmann's pouch the felony is compounded similarly, though egress is not the rule. The same intracystic pressure which lodges the stone in the ampulla or pouch may act to dislodge the impaction, thus relieving the obstruction to the neck and cystic duct. Thus it may be assumed that the so-called mild or even more severe attacks of gall stone colic are accompanied by varying degrees of inflammatory process. It may also be assumed that the inflammation may not leave any scars of consequence after relief of impaction or passage. (Figure 5) Here one thinks again of Kirschner's philosophy—rarely does a patient have but one attack of gall stone colic; that eventually the attacks will become more severe; that

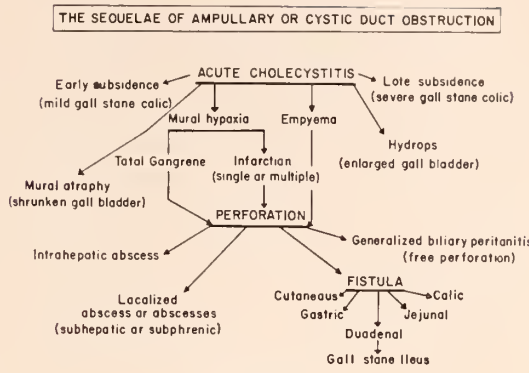


Figure 5

the optimum time to convince a patient surgery is imperative presents itself during an acute bout with stone. Hertzler[39] in his own inimitable fashion of "The Horse and Buggy Doctor" presents the picture of gall stone colic in the following paragraph taken verbatim from one of his many fine monographs: "When the gall bladder finds itself unable to expel its contents due to the presence of a stone in the duct it gets itself all het up, and this is expressed in terms of spasm. . . . Aside from the discomfort caused by the preliminary colic, the essential factor is inflammation of the gall bladder and its environs. Pain itself never killed anybody. As far as the welfare of the patient is concerned, the disease resolves itself into a study of inflammation. An acute attack after the first few hours is expressive of acute inflammation".

Figure 5 is a schematic outline of the consequent courses following an attack of acute cholecystitis.

The shrunken gall bladder (mural atrophy) may follow any attack or repeated attacks of acute cholecystitis. Stones are often embedded in its walls—in the Aschoff-Rokitansky sinuses or even in the ducts of Luschka. It is often an accompaniment of common duct stone. Though true empyema is rare it may lead to perforation with dire consequences. The large gall bladder seen in hydrops is an inert mucus or serous fluid filled sac, often extending in its immensity, and sometimes felt as a tumor, in the right iliac fossa.

As seen in Figure 4 the dangers of

hypoxia, with its resultant mural infarctions or total gangrene lead to perforation. Diffenbaugh, Sarver and Strohl[24] of St. Luke's Hospital, Chicago reported perforation in 11.9 per cent in a collected series of 5272 cases of acute cholecystitis. The mortality in the perforative series was 23.8 per cent. One is reminded of another disease with dire sequences, in crude comparison. At the John Gaston Hospital, the University of Tennessee teaching hospital 689 cases of acute appendicitis with perforation were reviewed. Of 3687, 16.7 per cent cases of acute appendicitis were perforated upon admission. The mortality for the series from 1945 to 1951 (364) was 6.6 per cent.[74] The indictment against delay in surgery of acute cholecystitis is the obvious parallel.

Free perforation, with its ensuing fatal generalized biliary peritonitis, fortunately is a rare complication. Intrahepatic abscess, due to perforation into the liver substance, is an uncommon occurrence. It may be single or multiple—the abscess may or may not contain extruded stones.

The protective mechanism of taxis is the most common reaction of the neighboring organs in the right upper abdomen. The transverse mesocolon, the transverse colon and hepatic flexure plus the omentum, and often the duodenum and stomach are found enmeshed in a more or less firm fibrinous exudate, walling off the impending or actual perforation. There, between the above mentioned organs and the inferior liver surface, one may find localized abscess or abscesses, extruded stones and bile. Areas of partial or complete mural ischemia and/or necrosis are often in evidence. Fistula results from contiguous necrosis of the walling off organs, the most common of which is the cholecysto-duodenal fistula. From cholecysto-duodenal fistula large stones are extruded that may produce gall stone ileus in the narrowing portion of the terminal ileum. The mortality rate is high in gall stone ileus as diagnosis is difficult and perforation of the ileum often is reported (McLaughlin and Raines[54]). These large stones, rarely pass through the cystic duct, but through the first or second portion of the duodenum, via an acute cholecysto-duodenal fistula. If gall stones are vomited they are usually pathognomonic of cholecysto-gastric fistula. Stones passed in the feces, if large, are indicative of cholecysto-colic fistula. The scout films of the abdomen, in the majority of these fistulae, reveal gas in the biliary tree. McLaughlin and Raines report a series of 366 cases of gall stone ileus.

Cholecystectomy for acute cholecystitis was first performed by the author in 1939, stimulated primarily by Heuer's convictions and then translated into action by the conclusions of Carter, Greene and Twiss (1939[18]). The results were encouraging from the beginning. The report of Wallace and Allen, in 1941, confirmed not only the imperative need for early operation after proper preparation, but also revealed an important factor previously unemphasized. In 415 cases of acute cholecystitis they reported gangrene present in 125 cases—29.4 per cent. Perforation was found in 64 cases of the 125 gangrenous gall bladders, or an overall percentage of 15.4 in the 415 reported. They found that gangrene with perforation is unusual before the sixth day of onset of symptoms, and that operation performed within four days of the onset of symptoms is relatively safe if proper preoperative preparation is meticulously deliberated.

During the past few years surgery has been extended in so-called "delayed acute cholecystitis" as recommended by Ross, Boggs and Dunphy and DeCamp, Ochsner, et al.,[22] and long ago suggested by Wallace and Allen. The "proper timing" of surgery in acute cholecystitis, they believe, is not confined entirely to the early three or four day period. The resolution of the inflammatory process is extremely slow and incomplete regardless of the clinical course of the patient. Touroff's pathological studies record this fact most convincingly. After a short deliberative period, devoted to restoring fluid and electrolyte balance, the institution of antibiotic

therapy, the proper leveling of the hematocrit, the establishment of the status of the cardiovascular system and a daily urinary output of better than a liter, "there is nothing to gain by delaying surgery". The inflammatory process may persist for months or even years after the clinical symptoms subside. They conclude, as their experiences have shown, that the concept of an arbitrary period during which surgery for acute cholecystitis is to be avoided, should be abandoned. Contrariwise, with the patient's condition going from bad to worse, a life-saving cholecystectomy, under intercostal anesthesia (Bartlett[5]) may be the only life-saving measure.

THE MANAGEMENT OF TECHNICAL PROBLEMS

The dangers in surgery of acute cholecystitis parallel the pitfalls encountered in chronic biliary disease. In the early acute diffuse cholecystitis, the operation is often easier in execution, due to the easy dissection afforded by demarcation of structures by edema. But the "easy case" rarely presents difficulties or anomalous vessels. The avoidance of these dangers and pitfalls may be summarized in a "Duodecalogue" which might aid in guiding one to Jericho without struggling through the Wilderness. They contain the admonitions and friendly reproofs of Lahey, Coller, Ochsner, Sanders and other excellent technicians too numerous to mention.

1. Do not attempt the operation if you are an occasional operator. As a general practitioner you have enough of headaches and worries without adding another.

2. Do not enter the operating room before you have secured an experienced and able surgical assistant.

3. Do not enter the operating room before you have secured a capable anesthesiologist or nurse anesthetist. Pentobarbital, curare or curare-like drugs require split-second attentions. High spinal analgesia often requires additional intravenous or inhalation complement.

4. Do not make your incision if the surgical lighting system is defective or inadequate for deep focus.

5. Do not operate without your best surgical spectacles. Lahey, with his spectacles *and* his Loupe would impress any bystander with the critical importance of seeing what you are doing in the deep recesses of the abdomen.

6. Do not expect to find "normal anatomy" in every triangle of Calot. This holds true in routine cholecystectomy as well.

7. Do not anticipate the degree or the extent of the pathological picture. See to it that the instrument table is well stocked for any complicating procedure. Remember that cholecystostomy may be the procedure of choice; free perforation; acute pancreatitis; advanced hepatic disease; friable duodenitis; the frozen common duct from previous attacks; poor identification of structures due to progressive inflammation.

8. Do not grasp blindly in a pool of blood with any instrument smaller than your hand. Place your index finger in the foramen of Winslow; raise the hepatic artery gently; compress it with your index finger and thumb. Then use the aspirator.

9. Do not dissect, clamp or tie the cystic duct before the cystic artery has been ligated and cut free. This maneuver will obviate the pool of blood "accident". Traction on the ampulla or Hartmann's pouch, when the cystic duct has been released from its turns and convolutions may cause the cystic artery to break, tear or leak. If the cystic artery slips under the common hepatic duct (or over it) you are in trouble. Most injuries, strictures or obstructions to the common hepatic duct occur at this unfortunate moment.

10. Do not clamp or tie the cystic artery until you have convincingly identified its parent artery — usually the right hepatic.

11. Do not hesitate to expose and examine the common duct whenever

feasible. It may obviate another operation for the removal of common duct stones.

12. Do not close the common duct or tie the cystic duct stump in choledochotomy, when exploration of the common duct is completed, unless you place a catheter in the common duct via the cystic duct stump or a T-tube in the common duct. In acute cholecystitis, when exploration of the common duct is indicated drainage of the biliary tree may prevent cholangitis, acute pancreatitis or biliary dyskinesia. You might leave an unsuspected calculus in the common duct or Ampulla of Vater—even if the operative cholangiogram is normal.

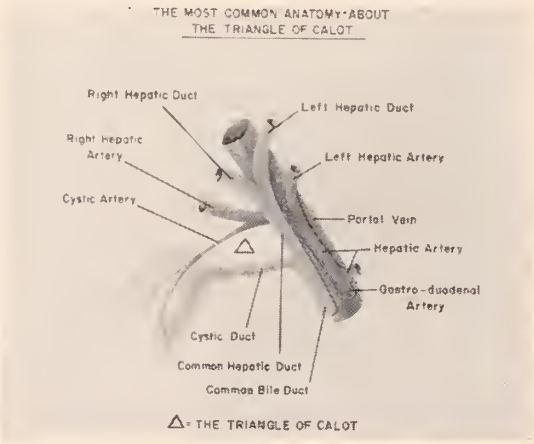


Figure 6 *

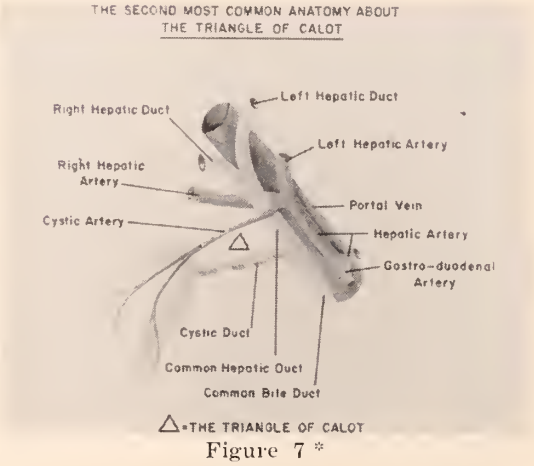


Figure 7 *

In Figures 6 and 7 are presented the schematic outlines of the two most frequently observed relations of the right hepatic and cystic arteries. Great care must be exercised often in denuding the cystic artery (with long fine pushers) so that the elbow or curve of the right hepatic artery is well visualized, in order not to include the elbow in clamp or tie. Postoperative shock, liver necrosis or atrophy have been reported when such an accident has occurred (Lahey and Pyrtek [46]).

REPORT OF A SERIES OF 97 CASES OPERATED UPON FOR ACUTE CHOLECYSTITIS

The following report records the experience of a single operator from 1939 to 1954 inclusive (16 years)—a series of 97 cases. This is an average of about 6 cases a year. Until recent years a four day (ninety-six hours) limit was rigidly adhered to, but since 1950, an occasional patient has been operated upon after ninety-six hours when all the preoperative criteria, as outlined previously, were met. Ninety-five cholecystectomies and 2 cholecystostomies were performed. Deaths were recorded in 2 cases, both cholescystostomies, and both performed under intercostal procaine anesthesia. One patient, 94 years old, blind, deaf, and in uremia (NPN 190 mg.) presented a palpable mass of two weeks' duration. A totally gangrenous, black friable gall bladder was drained. He died four days later in coma and anuria. The second patient, 58 years old, with long standing cirrhosis of the liver and ascites, acutely ill four days before admission, was operated upon the day following, after preliminary study and preparation. A distended gall bladder, easily palpable upon admission, was thought to be enlarging before surgery. Under intercostal procaine anesthesia he was operated upon through a transverse three-inch incision well below Mayo-Robson's point. A tremendously enlarged, distended, yet thick-walled acutely inflamed gall bladder, without stones, was seen. The fundus only was handled during surgery and a Pezzer catheter inserted. His wound, small as it was, disrupted com-

* The triangle of Calot was named by Jean Francois Calot in a booklet which appeared in Paris in 1891, published by G. Steinheil, and it was called "De la Cholecystectomie, (Ablation de la Vesicule Biliaire)," pages 40-42.

pletely on the seventh postoperative day with the cotton sutures cut through in all layers. Wound friability was marked. No fibrin nor coagulum was seen on secondary closure. He died on the fifth day following his second operation with a clinical picture of the so-called hepato-renal syndrome. Autopsy revealed no stones or obstruction of any type. The sphincter of Oddi was quite patent. The medical literature was investigated, searching for acute cholecystitis associated with cirrhosis of the liver. No cases were found.

THE AGE FACTOR

Sanders[69] first called attention to the fact that surgical mortality is higher in patients past fifty years of age. Both deaths in this series conform to his findings. Numerous papers since, Wallace and Allen, Glenn[34] and others, also pointed out that the younger patient has fewer complicating disorders, but the older patient usually has harbored infection in, and possibly obstruction to, the biliary tract for a long period of years, and thus has sustained varying degrees of liver damage. Compounding liver damage are cardiovascular, pulmonary, and urological handicaps that may prove fatal, during or following surgery. Table 1 outlines the age distribution and the mortality rate.

TABLE 1
AGE FACTOR AND MORTALITY RATE—97 PATIENTS
(1939 to 1954 incl.)

Decade	No. Patients	Deaths
10-20	5	0
21-30	8	0
31-40	14	0
41-50	13	0
51-60	29	1*
61-70	14	0
71-80	9	0
81-90	4	0
91-100	1	1**

* Cholecystostomy only—Age 58—advanced cirrhosis with ascites

** Cholecystostomy only—Age 94—gangrene, with uremia

It will be noted that over two-thirds of the patients were past 50 years of age with the greatest number of patients operated upon in the sixth decade. The overall mortality rate was 2.06 per cent. The fact that none of the cholecystectomized or choledochotomized patients died emphasizes that early surgery need not be too hazardous. Kirschner long ago pointed out, as have Root and Priestley[65] and others, the edema about the gall bladder and its environs often enhances easier dissection. The youngest patient was 17, the oldest 94. In the late teens and between 20 and 30 young multipara predominated. There were 69 females and 28 males in the series.

GALL BLADDER PATHOLOGY IN ACUTE CHOLECYSTITIS

The pathology of acute cholecystitis, as seen at surgery in this small series revealed a succulent, variably enlarged, diffusely congested, tense, edematous gall bladder. Since the majority of these patients were operated upon within forty-eight hours after onset the pathology, fortunately, was limited to the gall bladder, its ampulla and cystic duct. Often lines of demarcation on the neck or cystic duct could be discerned, especially in impactions in Hartmann's pouch or just proximal to the Heisterian valves. In this series there were distinctly more ampullary obstructions due to large stones than cystic duct obstructions with smaller stones. Homans' observations were similar. One ampullary stone and its wall was adherent to the portal vein! It is needless to add that the lady still has a small mural attachment of ampulla on the ventro-lateral wall of her portal vein. There were five patients in whom no stones were found or reported by the pathologists.

TABLE 2
GALL BLADDER PATHOLOGY IN ACUTE CHOLECYSTITIS
(1939 to 1954 incl.)

Acute diffuse cholecystitis	68
Acute diffuse cholecystitis with pericholecystitis, suppurative	12
Acute diffuse cholecystitis with mural abscess and infarction	5
Acute diffuse cholecystitis with perforation	5
Acute diffuse cholecystitis with empyema	2
Acute diffuse cholecystitis with solitary large infarction	1
Gangrene (complete) of gall bladder	4
No stones found	5

Two patients revealed stones within the liver substance, where perforation had

occurred in the wall, in the fossa vesicae. In one patient small stones were found within the protective inflammatory space between the gall bladder, the transverse mesocolon and duodenum. In two other perforative cases the solitary stone in Hartmann's pouch remained solidly wedged in place.

The great majority of the "easy" cases were found in the acute diffuse cholecystides, from twenty-four to seventy-two hours (acute diffuse cholecystitis). Gangrene was found in only 3 of the twenty-four to seventy-two hour groups—all in the third day of symptoms.

The concept of urging patients in the throes of acute gall stone colic to be admitted to the hospital for surgery was reborn (Kirschner, Miller, Root and Priestley and others) after repeatedly observing the early picture of acute diffuse cholecystitis. Though patients are frequently operated upon during their very first attack of gall bladder disease, Glenn stresses the fact that very few patients with acute cholecystitis fail to give a long history of symptoms relative to the biliary tract. "The patient and the gall stone fight it out to a finish" to quote Homans.[43] Surgeons might "intervene in that battle" at a time most propitious both to patient, who is acutely ill and suffering severe pain, and to surgeon, who will find a more than relatively diseased organ with superimposed acute edema and congestion.

Gangrene was found to be total in 4 patients—all past 60 years of age, and 3 contained impacted ampullary stones. Though no stones were found in 5 patients, the obstruction of the cystic duct by intense inflammation and edema was marked.

THE DURATION OF THE DISEASE AND THE MORTALITY RATE

The question of any type of surgery in the poor risk group arises in patients admitted to the hospital several days after onset. In the same group would fall those patients with known cardiovascular disease, diabetes, severe jaundice, the markedly aged and debilitated, no matter which day of the disease they enter. However,

TABLE 3
DURATION OF DISEASE AND MORTALITY RATE

Time of Operation	No. Patients	Deaths	Mortality Rate
Early (Before 96 hours)	90	0	0
Delayed (After 96 hours)	7	2	28.57%

in the delayed group there are found those in whom risk of surgical morbidity or mortality is minimal. As pointed out previously, surgery may be done at any time during the course of the disease provided the patient is well prepared for it. Before ninety-six hours, complications are not the rule, rather the exception. (Table 4). Age is an important factor. The older the patient the more associated disease and debility are found. Jaundice and common duct stone are seen in the long drawn out cases of biliary tract disease of many years standing. Cholangitis, pancreatitis, duodenitis and liver involvement are seen also in the latter decades. Especially in the delayed cases does one find more patients in the older groups. Their symptoms, as well as signs, are often minimal before serious disease is recognized. The 2 deaths reported here occurred past 50 years of age.

LOCAL COMPLICATIONS

There were few complications seen in contiguous or related organs and structures, other than common duct stone and jaundiced tissues in the patients operated upon within forty-eight hours after onset (Table 4). In the third day group gangrene of the gall bladder was found in 3 patients all past 60 years of age, but no involvement of contiguous organs other than a speckling cyanotic type of inflammatory reaction so common in the walling off process.

The pathologist often returns an acute gall bladder report with the picture of chronic cholecystitis predominating. He sometimes considers the acute elements as minimal, or even subacute. Hence, what is observed by the operator, at surgery, coupled with the clinical picture, might prove to be more vivid and actual. The edema and congestion at the cystohepatic

TABLE 4
COMPLICATIONS SEEN AT SURGERY

Common duct distention (explorations)	28 (28.87%)
Common duct stones	21 (21.65%)
Jaundice, clinical or lab. findings	19 (19.59%)
Hypertrophic lymphadenitis (cystohepatic)	11 (11.34%)
Acute pericholecystic hepatitis	5 (5.15%)
Perforation of the gall bladder (liver stones—2)	5 (5.15%)
Marked pancreatitis, acute	1 (1.03%)
Marked duodenitis, acute, adherent to G. B.	1 (1.03%)
Gall bladder adherent to portal vein	1 (1.03%)
Localized peritonitis (inflammatory mass)	Frequent
Free perforation with biliary peritonitis	None

angle of the gastrohepatic omentum is always present. The contiguous inflammatory picture produced by taxis of the neighboring organs and greater omentum cannot be seen by the pathologist. Nor does he see the mild duodenitis, pancreatitis and extrahepatic cholangitis accompanying the lesion, and so often the fine fibrinous cementing of all structures in the right upper quadrant.

In 28 cases there was sufficient evidence (jaundice, distended and dilated extrahepatic ducts, enlarged nodes along the common duct, and actually palpated stones in the common duct) to warrant choledochotomy. Common duct stones were found in 21 or 21.65 per cent of patients. Enlarged lymph nodes (other than the sentinal node) were found in 11 patients—some mimicking common duct stone in the inflammatory picture. Single or multiple stones in the common duct do not mean jaundice always, where a severe acute lymphadenitis may cause clinical jaundice. Jaundice, visual or by serum bilirubin determination (quantities over 3 mg. per 100 cc.) occurred in 19 patients.

The most frequent picture noted was the inflammatory mass surrounding the gall bladder, produced by the edema and congestion of the neighboring organs and greater omentum. It was typical of well localized peritonitis.

Since no liver biopsies were taken, the varying degrees of chronic hepatitis, cirrhosis, fatty infiltration, or even acute contiguous hepatitis only could be grossly determined. Acute contiguous hepatitis, in the partially enveloping fossa vesicae, was marked in 5 patients. This seems to be a rather meager ratio, considering the oft quoted "rich venous and lymphatic interchange" between the liver and the gall bladder wall (see section on Pathogenesis).

PREOPERATIVE AND POSTOPERATIVE NOTES

1. In addition to the criteria outlined previously, all patients are typed and matched for 2 units of blood preoperatively. Transfusion is given only if indicated.

2. Antibiotic therapy is given routinely, beginning as soon as the diagnosis is established. Therapeutic, not homeopathic nor prophylactic dosages of penicillin and streptomycin are given, and continued after surgery until the temperature is normal at least seventy-two hours.

3. Ace bandages are applied soon after the diagnosis is established—from the toes to the midportion of the calf muscles, and kept in position with longitudinal one-inch adhesive strips (Ochsner[61]). Since 1947, when, coupled with *early* ambulation, this method has been employed, no postoperative phlebothrombosis has occurred in the author's major surgery.

4. Early ambulation means many things to many surgeons. To the majority it denotes getting the patient out of bed and on his feet, walking, the day *after* or two days following surgery. Here it is defined as assisting the patient to his feet just as soon as the anesthesia effects are overcome. It is a matter of hours and not days. Instructions to the patients are given *before* surgery. Cooperation is universal and most surprising, with preliminary instruction. Marked debility and severely ill cardiac patients are the only exceptions.

5. Duodenal suction siphonage is started before surgery and continued for at least twenty-four hours post-

operatively.

6. Operative cholangiography should be used, as in elective choledochotomy if time and the patient's condition permit. It may rescue the patient from another surgical onslaught.

7. Elastic bandages and light dressings should be used upon the abdominal incision. Normal respiration requires a vast assist from the abdomen and the abdominal musculature. Cast-like adhesive bandaging leads to atelectasis, pneumonitis and poor cardiopulmonary exchange with its resultant hypoxia and cyanosis.

SUMMARY AND CONCLUSIONS

1. A short history of the development of surgery in acute cholecystitis has been sketched. Along with this development, the evolution of the ultimate procedure—cholecystectomy with drainage, is the operation of choice agreed upon by most surgeons. When the operator is confronted with an extremely critically ill patient, and he deems surgical interference imperative to save life, cholecystostomy is the procedure to be chosen, because of its simplicity and ease of accomplishment. "He who fights and runs away lives to fight another day."

2. The infectious factor, in the pathogenesis of acute cholecystitis, does not begin to explain the dramatic picture of the disease as observed in situ. It is a factor nevertheless not to be minimized, especially in the complications of perforation of the gall bladder, in gangrene and in empyema. Observations of many surgeons and pathologists lead one to believe that the involvement of the four vascular systems, entering or existing in the narrow confines about the triangle of Calot, biliary, lymphatic, venous and arterial, blocked by mural spasm and edema in the cystic duct or ampulla of the gall bladder, produces the initial and progressive pathology found. The cystic artery, acting very much like an end-artery, produces a problem in hydrostatics often impossible for the venous and lymphatic drainage to cope with. Hence, the unrelenting edema, congestion, hypoxia, diapedesis of cells and hemorrhage. Finally complete blockage of the cystic artery may occur, with resulting anoxia, gangrene and perforation. Due to the increasing intracystic pressure, the apex or ventral surface of the fundus is deprived of its blood supply first—and it is here where dissolution and perforation occur more frequently.

3. The "proper timing" of surgery in acute cholecystitis has been discussed and the evaluation of Orr (previously propounded by Wallace and Allen; Ross, Boggs and Dunphy; and DeCamp, Ochsner et al.) that "operation is indicated as soon as the patient can be prepared, provided the diagnosis is reasonably well established and there are no serious contraindications to operation". Where the critical period had been arbitrarily arrived at, between four to twelve days after onset, (because of the increased mortality ratio in that period) this lethal period exists, it is believed, because of the increasing severity of the disease rather than operative intervention.

4. Technical difficulties will always be found in biliary surgery. In early acute cholecystitis the usual cholecystectomy is made easier by the dissecting edema found about the cystohepatic angle and the triangle of Calot. Anomalies of the vessels, especially the right hepatic artery and the resultant displacement or changed position of the cystic artery, are not infrequent. The best assistant, the best anesthesiologist, the best surgical light, and the best eyesight produce a combination for the surgeon who is "at home" in surgery of the biliary tract—to reduce catastrophes so often reported, and more often bruited about in the surgical corridors. Securing, ligating, and cutting free the cystic artery first is a practice that will obviate accidents to the common hepatic duct. Cholecystectomy may be contraindicated not only in late disease but in earlier disease where a frozen area about the cystohepatic angle has resulted from previous attacks; where severe cirrhosis of the liver, pancreatitis, duodenitis etc. are encountered.

5. A report of 97 patients, operated upon by the author (1939 to 1954 inclusive) is presented. The majority (90) were operated upon within ninety-six hours. There were 2 deaths, both in patients operated upon under stress, and seriously ill. Cholecystostomy was done in both, under intercostal analgesia. One died in uremia, the other with an hepatorenal syndrome.

The ages in the series ranged from 17 to 94 years. Young mothers and multipara predominated the 17 to 30 year old group. The sixth decade represented the largest group (29). Over two-thirds of the patients were past 50 years of age. There were 69 female and 28 male patients in the series. The overall mortality rate was 2.06 per cent.

6. The elements of acute cholecystitis are often overshadowed by the predominance of chronic disease in the organ, as seen and reported by the pathologist. What is observed by the operator however is a picture of localized peritonitis, edema and congestion at the cystohepatic angle and an inflamed and enlarged gall bladder. He sees also the mild duodenitis, pancreatitis and extrahepatic cholangitis. This local pathology, plus the clinical diagnosis, with fever, leukocytosis, localized pain and/or mass, vomiting and a history of previous attacks of a similar nature comprise the surgeon's criteria—not the microscopic slide's verdict alone. This is not the fault of the pathologist, for he must "call them as he sees them". In the early stages, the first twenty-four to thirty-six hours, edema and congestion, plus chronic disease could easily be the predominant feature in any section of the gall bladder wall—especially where no infectious process is present.

Common duct explorations were carried out in 28 cases, with stones being found in 21. In 11 cases marked hypertrophic lymphadenopathy, some with jaundice, was recorded. Choledochotomy was performed when (1) a definite history of jaundice; (2) jaundice, clinical or laboratory; (3) stones palpated or seen in the common duct; (4) distended or dilated extrahepatic ducts; (5) cholangitis or (6) pancreatitis were present. Operative cholangiography should be done, if feasible.

THE CHOLECYSTIC CREED

1. Conservative therapy in acute cholecystitis is a snare and a delusion. Though it may appear immediately successful it eventually proves disastrous.

2. Successive attacks of acute cholecystitis lead to progressive inflammation.

3. Progressive inflammation leads to liver damage, pancreatic and duodenal involvement, perforations and peritonitis.

4. Patients with chronic cholecystitis are greater surgical risks when acute cholecystitis appears in their history—and vice versa.

5. Acute cholecystitis is a surgical emergency.

6. The operation of choice—cholecystectomy with drainage.

7. Jaundice, common duct stones and cholangitis require choledochotomy.

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DISCUSSION

Dr. Robert Kapsinow, (Lafayette): As I read over the copy of the paper by the essayist, I was amazed at the prodigious amount of literature he must have reviewed and abstracted. From personal experience, I can assure you it was no easy task and for that alone, he should be congratulated. It is nevertheless a curious fact that there are as many of our great surgical leaders arrayed on the side of conservative as there are on the side of radical surgery. Therefore, the problem resolves itself, not into accepting the opinions of one camp or the other, but into a high degree of individualization, not only of each patient but of the medical philosophy of the surgeon.

With each new advance in medical science, there comes a change in some phase of therapy in medicine or surgery, because of the advance. The magnitude of our thinking and our technics become ever more spectacular and more radical. So it has been with the subject of the acutely inflamed gall bladder. Electrolytes, hydration, transfusion and antibiotics have won new converts. The foreboding implications of such terms as gangrene, perforation and biliary peritonitis create a real panic.

As stated by the essayist and others, most acutely inflamed gall bladders arise because of an impaction of a calculus either in the cystic duct or the ampulla of the gall bladder. Bile can no longer get into the gall bladder and with the arrest of drainage, the circulation of the gall bladder becomes impaired and edema results. Several authors have attested to the small amount of bile spillage that results from perforation of the gall bladder and it is not evidence that the patient would have died, had he not been operated upon.

The constantly repetitious comparisons between the acutely inflamed appendix and the gall bladder are erroneous. The function, physiology and bacterial flora are different. Why not compare it with the acutely inflamed salpinx.

It occurs to me that the thinking should be along the line of whether jaundice is present or not. In the presence of jaundice, the chance of subsidence of the acute process is less problematic and inasmuch as the common duct will invariably have to be explored, then the sooner the abdomen is opened, the better. When jaundice is not present, then it becomes a matter of whether the condition is worsening or improving.

The concept of delayed surgery does not mean that the patient is left untreated. Indeed the extreme opposite is the truth. The very electrolytes, transfusions, fluids, and antibiotics used to prepare the patient for what must always be considered as emergency surgery, are exploited to the fullest, but with a plan conceived to tide the patient over the crisis to a time when ideal dissection and less hazardous exploration of the common duct may be undertaken.

Doubilet, in a different paper than the one quoted by the essayist, reports a series of 116 cases of acute cholecystitis which were treated by withholding surgery until the optimum time for operation. After excluding 19 cases which were treated for acute pancreatitis as the etiological cause, 55 cases received interval cholecystectomy. Of the entire series, only one patient died. Ten or 18 per cent of those undergoing surgery showed evidence of previous perforation or gangrene.

For the acutely ill rapidly deteriorating gall bladder patient, surgery must always be considered and all concerned should accept it as a calculated risk. It takes a great deal of courage to do a cholecystostomy immediately and quickly as a life saving procedure "and come back to fight another day" than to start doing a cholecystectomy and find it to be impossible and settle for a cholecystostomy.

I would like to make this query. Obviously not all the acutely inflamed gall bladders that have come under the essayist's care, were operated upon. I wonder what happened to those who refused immediate surgery?

—o—

SIGNIFICANCE OF OVERWEIGHT IN ETIOLOGY, PROGNOSIS, AND TREATMENT OF DIABETES MELLITUS, WITH REPORT OF CASES *

A. A. HEROLD, SR., M. D.
SHREVEPORT

Ever since Newburgh and Marsh of Ann Arbor, 1920, in the preinsulin days, advocated a high fat diet in diabetes, there has been much discussion as to calories, fats in food, and other problems in therapy of this affliction.

Allen in this country and Guelpa in Italy had, in the meantime, advocated undernutrition and advised starting this antiketotic and weight reduction technique by eliminating, first, fats and then proteins and carbohydrates, substituting low-nutritive liquids, notably broth, and whiskey. This idea was rational and had many followers, augmented constantly, until the advent of insulin in 1922.

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 4, 1955.

I feel that insulin usage, generally speaking, is not a cure for diabetes, but symptomatic relief and I am convinced, further, that its use, over a considerable period of time, especially in children, may be actually harmful, by resting the islets of Langerhans too much (possibly resulting in atrophy) and thereby making the patient more and more dependent upon the exogenous product, with the probability that a mild case might be converted into a severe one. How, then, is it possible to *cure* the disease? The answer is by dietary supervision; in the slender patients, careful study of the requirement with moderate increase in carbohydrates and, for a while, at least, giving proper insulin to promote metabolism and, very important, not to overlook the part being played by the liver, which, if damaged, causes overproduction of sugar in system through a faulty glycogenic function.

But with the obese diabetic, the problem is different, as we shall illustrate by a few cases from our records; weight reduction is the key and many patients, properly regulated for gradual loss of avoirdupois, may be taken off of insulin and caused to live comfortably provided the weight is held down.

This brings us to a consideration of the etiological factors. There can be no doubt about the part played by heredity. Whenever there is a history of the disease in the family of one parent, there is, according to authorities, a 50-50 chance that one descendent in 4 will develop it; if both parents' families have had it, one-half of the offspring will be pretty sure of getting it. Then, there is the probability of some focal infection resulting in pancreatitis and, ultimately, diabetes, especially in cases of gall bladder disease and pyelitis.

The third—and very important factor—is obesity and this fault is usually the result of overindulgence in food. Proper reduction of the overweight diabetic is the key.

Medical literature abounds in references to this subject and I shall quote a few, after which I will give synopsis of cases in our experience at North Louisiana Clinic in Shreveport.

In quoting authorities, I might first refer to many excellent articles in various issues of *Diabetes*, notably Vol. 2, No. 6, Nov. -Dec. 1953 number; Drazin writes on *Glucose Tolerance in Hypertension and Obesity*, concluding with the observation that both conditions decrease glucose tolerance, especially when they are concomitant, but more marked in the obese. These observations were on nondiabetics, only.

Short in *Medical Arts and Sciences*, (Vol. 6, No. I) on *Obesity*, notes that glucose tolerance is related to overweights, finding in 10 to 19 per cent overweight, an impairment of 18 per cent; whereas in 50 to 59 per cent overweight, it amounts to 44 per cent.

W. H. Olmstead in *Michigan State Journal* (Vol. 52, No. 10) in an article entitled *Obesity, with Key to Prevention of Diabetes*, states that undernutrition, as advocated by Allen should be kept in mind when advancing age develops obesity; to quote: "Obesity precedes the onset of diabetes in 85 per cent of individuals past 40 years."

T. P. Sharkey in *Ohio State Journal*, Nov. 1953, under subject of *Diabetes Mellitus and Obesity*, states: 1st, Heredity determines susceptibility to diabetes; 2nd, statistics show obesity to be the most important predisposing factor; 3rd, more prevalent in urban areas, due to less physical exertion; 4th, insulin contraindicated, as a rule, in most obese diabetics, except for complications. (Of Course!)

Newburgh and Conn (*J.A.M.A.* Vol. 112, No. 1) call attention to the various causes of hyperglycemia and glycosuria, but stress the obesity factor. Their conclusions: Gastineau and Ryneason (*Annals of Int. Med.* Vol 27, No. 6) stress the seriousness of the dangers of handicaps of obesity and urge that correction in both diabetics and nondiabetics should depend upon limitation of calories and not on drugs. On the other hand, Roberts (*Annals of Int. Med.*, Vol. 34, No. 6) advocates the use of dexamyl as a valuable ad-

junct in reducing overweight diabetics, so that they may reduce the glycosuria and glycemia, as many cases have done and thereby eliminate insulin.

Quoting from Duncan on *Diseases of Metabolism* (p. 717 and p. 721):

"Those most widely recognized are (a) heredity, (b) endocrine disturbances affecting the pituitary gland and adrenal cortex, and to a less extent the thyroid gland, (c) obesity, and (d) a group of miscellaneous factors such as race, sex, infection and destructive lesions of the pancreas." . . .

"Note should be made of the recent papers by Haist, Campbell and Best, who have shown that fasting or a diet high in fats leads to a reduction of the insulin content of the pancreas while a diet high in carbohydrate leads to an increased content."

CASE REPORTS

W. L. G. A. aged 63, first consulted me in December 1947, with a typical history of uncontrolled diabetes; weight was 280½ lbs., excessive appetite, had eliminated sweets but paid no attention to total calories. Complications have been psoriasis and arthritis; also prostatic disease. Under supervision of diet (which has not been very satisfactory), all troubles have cleared and he, now, with blood sugar readings near normal and weight 257 lbs. or lower, feels very well and is aglycosuric.

E. H. A. aged 42 when he first consulted me (Oct. 1952) with chief complaint of diabetes known since 1935, and now with furunculosis for past year. His highest weight had been 271 lbs., at this time 209 lbs.; symptoms, polyuria, polyphagia and polydipsia; blood sugar 216 with 3 plus glycosuria; blood pressure 142/90. He stated that he had been on a diet, but not like I gave him. Pyorrhea noted and ordered corrected.

Nov. 1952, weight 204, urine 1 plus.

Dec. 1952, weight 196, urine 1 plus and clear.

Apr. 1953, weight 189, urine clear and faint trace; B.P. 139.

July 1953, weight 190, urine all clear; B.S. 113, B.P. 120/82.

Boils gone and feeling fine. Later reports the same.

F. A. aged 63 in 1950. First seen by me with chief complaint of diabetes (as far as he knows) for four weeks previously; usual symptoms and loss of some weight. Has had bad teeth (and pyorrhea) which is being attended to. Weight 186½ lbs., formerly a little over 200 lbs. Polyuria, polydipsia. Has been put on 17 units P.Z.I. elsewhere. Shortly thereafter, I left the city and he was cared for by Dr. Herold, Jr., who followed him along dietary lines, gradually withdrawing insulin. When last seen, he was taking no insulin, weight down to 166, blood sugar 127, feeling well and this has continued to date, to the best of our knowledge.

Mrs. J. M. B., age 57, first had symptoms of diabetes in 1951, at which time she had shown increased blood sugar at times. She visited two very prominent clinics in this country and reported to me in March 1951, with weight of 189 lbs., blood pressure 170/94 and taking 20 units insulin daily and receiving, in return, many hypoglycemic reactions. With reduction of diet, gradual elimination of insulin, her weight came down, last blood sugar record being 160 postprandial, weight 162½ lbs., blood pressure 142/88 and feeling well.

These are but four of our cases picked at random; we have many more similar ones in our files. You will note that none of these are now on insulin and, while I strongly advocate insulin, when indicated, I think that patients can, in such instances, do very well without it.

And now, as a brief summary and a few personal impressions, I would like to conclude, as follows:—

1. As metabolism of fats, without presence of carbohydrates, produces ketone bodies, we should be careful, in dietary menus, not to eliminate carbohydrates entirely.

2. Never neglect the liver's need for carbohydrates, for, with exhaustion of glycogen, this organ may throw out toxic substances, which develop into ketone bodies, as shown by experiments of Mirsky and associates. Also the work of Soskin emphasizes the importance of the liver (over-production) in diabetic etiology.

3. Insulin not only metabolizes sugar, but it also enables the liver to store it as glycogen.

4. Slender diabetics, practically all — like growing children — require insulin with proper control of calories, but with liberal carbohydrates.

5. All juvenile diabetics require insulin but care should be taken not to get reactions and I advise against useless glucose tolerance tests.

Finally, obesity is the main thing to

avoid in those with diabetic tendency or diabetic family history and the principal weapon to combat it with is caloric restriction.

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EVALUATION OF ONE YEAR'S EXPERIENCES WITH CULDOCENTESIS AT CHARITY HOSPITAL OF LOUISIANA AT NEW ORLEANS *‡

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Among the diagnostic aids in the armamentarium of the gynecologist, none has been more valuable on the Tulane service at Charity Hospital than culdocentesis. Employed in hundreds of cases, the procedure has proved itself to be quick, innocuous, and ultimately accurate, when interpreted properly. The term "culdocentesis" was coined nine years ago by Beacham [1] to describe the aspiration of fluid from the cul-de-sac or pouch of Douglas in the female. At that time, culdocentesis may have been viewed by many to be used only on hospitalized patients as a teaching procedure. Today, it is employed by most gynecologists on the Tulane staff and other practitioners on patients in the office, at home, in outpatient departments and on wards when the diagnosis of a case is doubtful. Culdocentesis is especially valuable as a diagnostic aid. It should be remembered that culdocentesis is not only responsible for many accurate diagnoses leading to emergency surgery, but conversely, many patients are spared an unnecessary laparotomy.

METHOD OF CULDOCENTESIS

With the patient in the lithotomy position, the vagina and cervix are painted with a mild, bacteriostatic solution, such as aqueous zephiran. A Graves speculum is inserted. The posterior lip of the cervix is then grasped with a tenaculum or sponge-holder (we find the latter preferable, since it usually will not cause bleeding). The cervix is mobilized anteriorly and caudad, so as to expose the posterior fornix. An 18 gauge, long spinal needle is then placed lightly against the vaginal mucosa, in the midline of the posterior fornix and about 1 cm. lower than the insertion of the uterosacral ligaments. The needle is then pushed firmly and quickly about 2 cms. into the cul-de-sac. (The patient experiences moderate, momentary, transient pain when the needle perforates the peritoneum, but it is so mild that anesthesia or analgesia is rarely required. We have tried local anesthetics such as pontocaine and cocaine earlier in the series and have not found even this procedure necessary. We have, on occasion, given 100 mgms. demerol I. M. or I. V. for analgesia to a hyperkinetic patient, and it has helped some and complicated others by causing vomiting or stupor. By and large, our culdocenteses are done without anesthetics or analgesics.) A glass adapter, attached to an aspirating syringe by means of a small length of rubber tubing, is then inserted into the needle and suction is made with the syringe. In the absence of the glass adapter with rubber tubing, the syringe may be attached directly to the spinal needle and the contents of the cul-de-sac aspirated. The needle is not pointed laterally, is held steadily in the midline and is not permitted to "wander". It is withdrawn in the same fashion as it is introduced. One tap frequently produces enough fluid to establish a diagnosis—but if no fluid is obtained, a "dry tap" is recorded and the procedure is repeated once or twice.

EVALUATION OF CUL-DE-SAC FLUID

There are four categories of fluid that may be aspirated:

1. Blood
2. Pus

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‡ Aided by the Ex-Residents and Fellows' Research Fund.

3. Peritoneal fluid
4. Encysted fluid (e.g., dermoid, endometrioma, follicular cysts)

The above may occasionally be found in combination, especially if the needle point is inserted too deeply or too far laterally.

1. *Blood*:

A. When blood is aspirated from the cul-de-sac, it should be observed for at least six minutes. If it does not clot, it is pathognomonic of hemoperitoneum and the patient should be regarded as a surgical emergency and operated upon as soon as practicable. The majority of patients in this category will be found to have ectopic pregnancies. A small number of patients will have bleeding from ovarian cysts. These cysts are usually ruptured follicular or corpora luteal cysts. Nonclotting blood may contain particles of old blood clots, which is especially diagnostic of hemoperitoneum.

B. If the blood clots, it may be assumed to have come from an artery, vein, or the uterus and the entire procedure should be repeated with a new culdocentesis set.

C. Pink-tinged peritoneal fluid (not blood, is also indicative of a "traumatic tap".

D. "Watery" blood aspirated is indicative of a mixture of blood and peritoneal fluid; here, experience in interpreting culdocenteses is important, as well as consideration of the clinical picture.

2. *Pus*:

Aspiration of free pus indicates peritonitis or ruptured viscus. (e.g., ruptured tubo-ovarian abscess, ruptured appendix, ruptured gall bladder, or acute pancreatitis).

A. Aspiration of encysted pus indicates a pelvic abscess. If the mass bulges into the posterior fornix, it is our policy to establish the diagnosis by culdocentesis, aspirating approximately 20 cc. of pus and then instilling 10 cc. of varidase through the same spinal needle into the abscess, in order to decrease the viscosity of the abscess contents. This is followed in twenty-four hours by colpotomy. (If the mass is encysted and out of the pelvis, we do not attempt aspiration). The pus obtained is smeared and examined directly, then sent to the laboratory for culture and sensitivity studies.

B. A diagnosis of ruptured pelvic abscess classifies a patient as a surgical emergency. Immediate surgical management of such patients in the past three years has reduced the mortality rate from ruptured pelvic abscess on our service from 60 to 10 per cent.[8] Credit for the rapidity of diagnosis must be given to culdocentesis.

3. *Peritoneal Fluid*:

When this type of fluid is obtained clear on aspiration, a ruptured viscus is not present. Of course, if clinical reason points to an unruptured tubal pregnancy, the patient may be hospitalized for twenty-four to forty-eight hours for direct observation, *blood typing and cross matching and repeated culdocentesis.* Or she may be sent home and instructed to return quickly if abdominal pain, bleeding or syncope ensues. *Blood typing and crossmatching is still mandatory.*

4. *Encysted Fluid*:

A. Dermoid fluid, which is yellow and congeals on cooling, may be obtained accidentally if a dermoid is not suspected. Abdominal removal of the dermoid solves this problem.

B. Chocolate fluid aspirated from an endometrioma establishes a diagnosis of endometriosis.

C. An ovarian cyst, suspected of being a persistent follicular or corpus luteal cyst, and revealed by its clear, straw-like color, may be emptied by culdocentesis and save the patient an abdominal operation.

D. If a cystic mass is strongly suspected of being malignant, direct aspiration is contraindicated. However, it may be possible to aspirate peritoneal fluid from the cul-de-sac and this fluid may be centrifuged in the laboratory, the sediment imbedded in wax, sectioned and examined cytologically for metastatic, malignant cells. This method, plus biopsy of a random inguinal node on the affected side,

originated by Collins, is employed on the Tulane service in attempting to diagnose carcinoma of the ovary.

COMPLICATIONS OF CULDOCENTESIS

It is our belief that the procedure of culdocentesis is essentially simple, so much so that senior medical students in Gynecology at Tulane are required to perform at least one before being graduated. It is regarded as just as fundamental as teaching a student to biopsy or cauterize a cervix or teaching him how to perform an adequate pelvic examination. Interpretation of the aspirated fluid requires some experience—but the presence of nonclotting blood to the novice or professional means hemoperitoneum and emergency surgery is indicated.

Culdocentesis may be considered by some to be a dangerous procedure but we are of the opinion that it is innocuous. Bowel has, on several occasions, been entered through the cul-de-sac with the spinal needle. The latter has been withdrawn without "wandering" the point and a new set of instruments used to repeat the procedure. Of all the culdocenteses performed on our service, there are no recorded or verbal instances of peritonitis, fistulae, or pelvic abscesses developing as a result of this inadvertent entry into the bowel.

REVIEW OF MORTALITY OF ECTOPIC PREGNANCY

The mortality due to ectopic pregnancy at Charity Hospital, uncorrected, was 11.4 per cent from 1919 to 1936 (51 deaths). From 1937 to 1950, the mortality was 2.6 per cent (18 deaths). From January 1, 1951, to July 1, 1953, the mortality was 0.38 per cent (1 death in 255 cases of eccyesis. This patient died on arrival before admission.) Of these cases, 133 were on the Tulane service. Including the latest 45 cases in this report, there were 178 patients with proven ectopic pregnancies from January 1, 1951, to July 1, 1954, who were treated surgically and successfully on the Tulane service with *no* fatalities. Credit must be given to the improved residency system, better anesthesia and blood banks but the major factor contributing to the lowered mortality in this entity has been culdocentesis.[2-7]

REPORT ON THE ONE YEAR STUDY OF CULDOCENTESIS

Beginning with July 1, 1953, a detailed record of each culdocentesis performed in the admitting rooms and clinics was kept by the residents on the Tulane Unit, Charity Hospital. Special forms for this purpose were devised and mimeographed and included the following data. Patient's name, age, race, hospital number or home address, type of fluid obtained, number of taps per patient, disposition, diagnosis, and treatment. Each resident signed his name and date on these forms, which were collected daily and totalled for each month. Monthly totals were added in computing the yearly totals. Although the residents were responsible for the statistics, the culdocenteses were performed by various personnel:

1. Staff
2. Residents and Fellows in all levels of training.
3. Internes [Supervised by (1) or (2)]
4. Medical students [Supervised by (1) or (2)]

In the year surveyed (July 1, 1953, to July 1, 1954), 13,338 patients (9,970 colored and 3,368 white) were seen on the Tulane service at Charity Hospital in the clinics and admitting rooms (Table 1). Of these, 717 patients (613 colored and 104 white) had culdocenteses performed. (Table 2). That is to say, for every 18.6 patients seen, 1 had a culdocentesis. The total number of single "taps" done was 1,088, which means that each patient had an average of 1.5 cul-de-sac aspirations. It should be re-emphasized that these were

TABLE 1
CULDOCENTESIS
TULANE UNIT—CHARITY HOSPITAL
JULY 1, 1953 - JULY 1, 1954

Total Patients Seen		
	W. 215	
Admit Room	C. 739	954
	W. 3153	
Clinics	C. 9231	12,384
Total		13,338

TABLE 2
CULDOCENTESIS
TULANE UNIT—CHARITY HOSPITAL
JULY 1, 1953 - JULY 1, 1954

Culdocentesis Performed		
Admit Room	W. 40 C. 228	268 Patients (28%)
Clinics	W. 64 C. 385	449 Patients (3.6%)
Total		717 Patients (1,088 single "taps")
(13,338 Pts.)	(5.4% had culdocentesis)	

not indiscriminately selected patients, but they were patients who presented signs or symptoms of possible ruptured viscae which, according to our criteria, prompted the cul-de-sac punctures.

Of the 717 patients who had culdocentesis performed, 59 yielded nonclotting blood. In 30 patients pus was aspirated, peritoneal fluid was obtained in 527 patients and 101 demonstrated no fluid (Table 3). Of the 59 patients (8.2 per cent) who had nonclotting blood on culdocentesis, 3 were not operated (2 therapeutic aspirations of vaginal cuff hematomas and 1 endometriosis). The remaining 56 were operated (Table 4). Of these (Table 5), 45 had proven ectopic pregnancies; 3 had a diagnosis of bleeding corpus hemorrhagicum; 3 had bleeding corpora luteal cysts and 1 had a hemorrhgic tubo-ovarian mass.

TABLE 3
CULDOCENTESIS
TULANE UNIT—CHARITY HOSPITAL
JULY 1, 1953 - JULY 1, 1954

Results	
1. Blood	59
2. Pus	30
3. Peritoneal fluid	527
4. Dry	101

TABLE 4
CULDOCENTESIS
EVALUATION OF ACCURACY

Patients with Unclotted Blood	59
Minus Patients Not Operated (Includes 1 Endometriosis & 2 Therapeutic Aspirations of Vaginal Cuff Hematomas)	3
Patients Operated with "Positive" Cul de Sac Punctures	56

TABLE 5
CULDOCENTESIS

	Correct Diag.
Pts. with Ectopic Preg.	45
Bleeding Corp. Hemorrhag.	3
Bleeding Corp. Luteum Cysts	3
Hemorrhage into Both Adnexae	1
Hemorrhagic T-O Mass	1
Total	53
ACCURACY: 53 = 94.6%	
56	

There were 3 patients who demonstrated no bleeding foci at laparotomy (Table 6), so that 53 patients out of 56 were operated upon with the correct diagnosis. This represents an accuracy of 94.64 per cent for the entire year. There were no fatalities in any of the above cases.

Of the 30 patients (4.2 per cent) who had pus on culdocentesis (Table 7), 4 had

TABLE 6
CULDOCENTESIS

	Incorrect Diag.
Threatened Abortions	2
Salpingo-Oophoritis	1
Total	3

TABLE 7
CULDOCENTESIS
ANALYSIS OF 30 PTS. WHO YIELDED PUS

Ruptured T-O Abscesses	4
True Pelvic Abscesses	15
Pelvic Peritonitis	3
Salpingo-Oophoritis	6
Old Pyosalpinx, Asymptomatic	1
Dermoid Cyst	1
Total	30
(Above pts. treated medically or surgically with no fatalities.)	

ruptured tubo-ovarian abscesses treated by immediate surgery; 15 had unruptured cul-de-sac or tubo-ovarian abscesses. The cul-de-sac abscesses were treated by colpotomy and the tubo-ovarian abscesses (which did not "point") were treated medically until they were "cooled down", then they were treated surgically after an appropriate interval had elapsed. Culdocentesis greatly aided in the proper selection of an antibiotic, since the pus ob-

tained was smeared directly, then sent to the laboratory for culture and sensitivity studies. Three patients had pelvic peritonitis; 6 had acute salpingo-oophoritis; 1 had an old asymptomatic pyosalpinx and 1 had a dermoid cyst of the ovary. All these patients were treated medically or surgically and there were no fatalities.

Clear peritoneal fluid was revealed on culdocentesis in 527 patients (73.5%) which was considered as normal (Table 3).

No fluid was obtainable on aspiration of the cul-de-sac in 101 patients (14.0%) and these were listed as dry.

We would like to point out that many of the above patients had been seen by other physicians, both inside and outside the hospital, before admission to our service. The diagnosis for each one of these patients was made or confirmed by the use of culdocentesis. We feel certain that had culdocentesis been employed by these other physicians, the correct diagnosis would probably have been made. All physicians can perform culdocentesis — at home, in the admitting room, and in the office. Most physicians do not possess a culdescope—but they do have a needle and syringe. Patients do not have to be subjected to general anesthesia and exploratory laparotomy or colpotomy if physicians will use culdocentesis to help them establish or confirm their diagnoses.

CONCLUSIONS

1. Culdocentesis is especially valuable in confirming a diagnosis of hemoperitoneum or establishing one where it was previously unsuspected.

2. Culdocentesis may be done on outpatients as well as inpatients. Basic equipment includes an 18 gauge long, spinal needle and a hypodermic syringe.

3. Culdocentesis helps establish a diagnosis more rapidly; hence, morbidity is diminished, mortality is lowered, and number of patient days in the hospital are decreased.

4. Culdocentesis is an invaluable aid in treating peritonitis and pelvic abscesses since the aspirated pus can be sent to the laboratory for culture and sensitivity studies, resulting in the selection of the proper antibiotic.

5. Culdocentesis is innocuous, shown by the absence of recorded or verbal complications in the 717 patients who had 1088 single "taps" in the surveyed year.

6. All physicians can perform culdocentesis at home, in the admitting room and in the office. Most physicians do not possess a culdoscope—but they do have a needle and syringe.

(This statistical study was consummated only through the splendid cooperation of the entire Tulane Ob.-Gyn. Resident Corps and we wish to acknowledge publicly the immense help they contributed to the project.)

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LOUISIANA PHYSICIANS: PIONEERS IN THE AMERICAN PUBLIC HEALTH MOVEMENT*

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In 1934, this Society commemorated at its annual gathering, the centennial of the establishment of the Medical College of Louisiana, later to become the Tulane School of Medicine. In 1944, it celebrated the centenary of the founding of the New

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 3, 1955.

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Orleans Medical and Surgical Journal. Both of these events were notable milestones in the development of medical knowledge in Louisiana. At this meeting we signalize the hundredth year since the founding of the Louisiana State Board of Health. We can justly honor this occasion also for several reasons. Firstly, this is the oldest State Board of Health in the United States. Secondly, its founding was the handiwork of the physicians of Louisiana, struggling against powerful forces to create an instrument for the control of epidemic disease based on the application of the most enlightened medical knowledge of the time. Thirdly, the physicians responsible for its creation, and subsequently, for its progressive development were among the most eminent practitioners and teachers in the history of medicine in Louisiana, many of whom were nationally famous, playing brilliant roles as medical and public health pioneers of our country. It is fitting, therefore, at this time to recall some of the important social forces and events, and the roles of some of these eminent physicians whose genius and energy led to the establishment of the State Board of Health and helped to shape the history of the public health movement in America.

The history of public health in Louisiana can be understood only in the context of the history of public health in the United States and in colonial America, and this in turn, only as a continuation of the public health history of the old world.

THE PRELUDE

Every period in human history has been characterized by the pre-eminence of a particular pattern in the incidence of diseases. This was so because of the very nature of social change. From one period to the next, social and environmental changes had inevitably taken place. Each period, therefore, was a unique medium for sustaining the occurrence and spread of certain diseases in a certain pattern.

The disease patterns which had predominated in the prehistoric epochs have not as yet been fathomed. It does, however, appear that the first diseases to terrorize civilized man were the diarrheas and dysenteries. At the dawn of civilization, man already lived in large enough communities whereby the contamination of the soil and water by excreta could have given rise to epidemics of enteric diseases. It is quite probable that such epidemics began to occur among the barbarians of the upper neolithic period even before civilization, when organized village life first came into existence. The rationale of the above is based on the fact that no human physiological activity is more conducive to the ubiquitous spread of disease than that of defecation. Man has had thousands upon thousands of years to ponder this problem. That he did engage his faculties to consider this problem is evident from the fact that excreta control practices were already well developed at the beginning of recorded history. At that time, privy and drainage construction of good quality were found in excavated villages of the Middle East. Such ingenious inventions must have taken hundreds and even thousands of years of experience to develop in those days when social change and the coming into being of new ideas took so long. These inventions came about not from knowledge of the causes of enteric fever, but from experience and empirical consideration that such practices served as safeguards against illness. It can be safely presumed, therefore, that the basic lessons in hygiene for these ancients came not from the pedagogy of their magicians and medicine men, but from their terrible experiences with diarrhea and dysentery.

By the time that the biblical period came upon the scene of history, social conditions had changed enough to alter the pattern of the disease experience of man. His previous experience, however, became incorporated in the Mosaic Code of hygiene practices in the first five books of the Old Testament. This code plainly indicates a long standing concern with practices aimed to eliminate the hazard of diarrheas and dysenteries. It appears that

during the biblical period, various contagious and infectious diseases plagued community life, such as leprosy, ophthalmia, infantile epidemics, pestilential fevers, enteric infections, venereal diseases, elephantiasis, skin diseases and many others, but the disease which spread the greatest terror among the people was no longer the enteric infections, but leprosy. This disease became the dictator and taskmaster of the biblical and dark age periods. This was the tyrannical pedagogue who taught with mortal chastisement, the techniques of isolation, and decontamination—measures which also served well in the control of many other communicable diseases.

As the clouds of the Middle Ages began to disperse, a new and restless epoch emerged, animated by science and pressured into commercial and exploratory enterprise. Thus, a new pattern of social development was initiated, bringing forth a new complex of diseases to try man's endurance and to test his ingenuity. Among these diseases one stood out as the sign of the times, to wit, the plague. "A more frightful teacher than the plague, which swept over humanity with special fury in the middle of the fourteenth century, it is difficult to imagine," is a deftly chosen quotation lifted by Winslow [1] from Diepgen's essays. Concerning this apt description of the situation, Winslow [2] further comments, "As suggested in the quotation . . ., the Black Death was the great teacher in this field (i.e., in the epidemiology of infectious diseases.) A preliminary course was, however, offered by leprosy and, at the end of the fifteenth century, a post-graduate course by syphilis."

COMMUNITY EXPERIENCE AS TEACHER

The student of the history of medicine and public health may become intrigued by the finding that the origins of the basic practices used by civil authorities to control epidemic disease have seldom resulted from discoveries made by the great figures in medical history, but rather were learned by communities from the experience of tragic visitations of various epidemic diseases. The student must, therefore, be struck by the following facts:

1. That the fundamentals by which communities protect the lives of their people were developed very early in the experience of mankind.

2. That these *basic* practices appear to have been developed by community efforts rather than by individual ingenuity.

3. That few physician's names, or the names of other persons have been found associated with the discovery of any of these *basic* practices.

4. That mostly in the refinement of techniques do we find associated the names of great physicians or other professional men, and this more usually in modern times.

Not only were the basic environmental and personal hygienic techniques such as disposal of excreta, control of water supplies, draining of swamps, control of insects and rodents, protection of food, avoidance of overcrowding, decontamination of fomites, isolation and quarantine, and the cleansing of hands and body discovered anonymously through community experience, and mostly in the deep past, but also such fundamental techniques as sterilization and vaccination. Only with regard to the refinement of these techniques, and their extrication from the perplexity of empiricism and their elevation into a scientific sphere, are the names of great men associated.

THE AMERICAN EXPERIENCE

The forebears of the American colonists, therefore, received their most poignant lessons in the preservation of health from such teachers as leprosy, syphilis, and the plague. The latter disease almost destroyed the commerce that made its spread possible. But the great teacher [3] of the colonists themselves and the descendants for three hundred years was another plague, the yellow fever—an epidemic terror which struck awe in the hearts of Americans until the genius of the Carlos Finlay-Walter Reed team finally ferreted out the last secret from this celebrated pedagogue.

Why was yellow fever such an effective teacher? Undoubtedly because, like plague, it struck like lightning with devastating effects, leaving a population stunned with consternation and expectancy. And also because the nature of its spread could not be wholly described on the basis of the usually accepted dynamics of contagiousness and infectiousness. It required the most versatile of mental gymnastics, of philosophic acumen, of observational acuity, and of statistical analytics to try to solve the mystery of its mode of occurrence and spread. Every phase of the physical and social environment had to be taken into the scope of deliberation in developing a rationale of its epidemiology. Besides all this, the medical profession was completely helpless in treating this plague, and are not today exceptionally versatile in this matter.

Yellow fever was first accurately described by Jean Baptiste Dutertre [4] in Guadaloupe, French West Indies, in 1635. It, however, took some years before knowledge of this disease entity became widely known. According to Dr. Henry R. Carter [5], preponderant evidence indicates that this disease was imported to America from Africa during the early slave trade period. By the middle of the 17th century the disease appears to have become well established in the West Indies, and had moved into Central and South America. A series of yellow fever epidemics in Yucatan, Barbados, and Cuba in 1648-49 had repercussions farther north. In Massachusetts, the general court, meeting in Boston, established a precautionary quarantine, in March 1648, for all vessels arriving from the West Indies because of "ye plague or like infectious disease" [6] which was not lifted until the following year in May 1649. The outbreak in the West Indies having been taken for a plague-like disease, the usual sanitary measure employed against plague by the Europeans, namely, quarantine, was invoked.

There is no evidence that any yellow fever occurred on the North American continent before the last ten years of the 17th century. What was probably the first yellow fever outbreak on the North American continent occurred in 1693, when a British fleet coming from Barbados anchored in Boston harbor. Concerning this, Cotton Mather wrote: "In the month of July a most pestilential Feaver, was brought among us by the Fleet coming in to our Harbour from the West Indies. It was a Distemper, which in less than a week's time usually carried off my Neighbours, with very direful Symptoms, of turning Yellow, vomiting and bleeding every way and so Dying." [7] In 1699, an epidemic in Philadelphia destroyed one-sixth of the inhabitants. In the same year a severe epidemic appeared in Charleston and also again in 1703, 1728, 1732, 1739, and 1740. Philadelphia had epidemics in 1741, 1747, 1748, 1762. The most panic-ridden epidemic prior to the 19th century was in Philadelphia in 1793, where La Roche estimated that about 11,000 cases occurred with over 4,000 deaths from a population of about 50,000 persons. At that time Philadelphia was the capitol of Pennsylvania and of the United States. The panic was so great that the central processes of administration of the Governments of the United States, of Pennsylvania, and of Philadelphia were in complete dissolution for the duration of the epidemic.

American medicine in the 17th, 18th, and most of the 19th century, was based on the classical Hippocratic-Galenic teachings with various degrees of modern influence as represented mainly by the teachings of Sydenham, Boerhaave, Cullen, Monro, Lettsom and Brown. For preventing yellow fever, this wisdom was very unproductive, although potentially fruitful with its concept of "epidemic constitution." For treating this disease, it was either neutral or harmful, but practically always void of virtue.[8] Acute, easily communicable diseases with rapid mortalities have always been the bane of the therapeutic art. This is almost as true today as it was then, and particularly so for yellow fever. No wonder this disease

became the great teacher in American medicine and in the health administration of civil government. Community catastrophe that could not be controlled by treatment had to be conquered by prevention. To this end, the scientifically trained American physicians of the 18th and 19th centuries devoted the greatest of their mental efforts. One needs only scan the American medical literature of these two centuries, and follow the story of the physicians' participation in the development of public health administration in North America to realize how cogently true this was.

THE LOUISIANA EXPERIENCE

The early experience of North America in health and disease was, to a great degree, the experience of Louisiana. New Orleans was founded in 1718. Yellow fever was believed to have existed there practically every year up to the date of American domination in 1803,[9, 10] but with epidemic intensity in 1765 and 1766. During the colonial period, there were evidently but few physicians in New Orleans. Most of these had immigrated from Europe, and appear to have been of French and Latin extraction. They were as highly trained as European schools could render, and had the exquisite culture of gentlemen of the day. As far as the available records show, their participation in civil government in the role of medical sanitarians is not easily detected. Only after annexation to the United States when American trained physicians migrated into Louisiana, did a trend of participation in community health problems become noticeable among physicians. This latter observation pertaining to the early lack of the physicians participation in community affairs may be more apparent than real. Because of the natural terrain and meteorological conditions, environmental hygiene could not but have been a most important consideration of medical men of Louisiana. During the 19th century, New Orleans experienced more than 60 outbreaks of yellow fever.

Because of the persisting epidemics, Governor Claiborne, in 1804, urged the Legislative Council to consider a scheme of city planning suggested by the President of the United States, Thomas Jefferson. Several years later, Claiborne recommended the adoption of quarantine and general health laws. Apprehensive of a prevailing yellow fever epidemic situation, the city council of New Orleans on June 4, 1816,[11] called a meeting to obtain the advice of the Société Medicale. The Public Health Committee of the society gave the city council a long list of recommendations, most of which pertained to the sanitation of the city. Among the recommendations was the creation of a Board of Health. Because the opinion among the Société Medicale was strongly toward the theory of the importation of yellow fever, adoption of quarantine laws was also recommended. In the winter of 1816-17, an act creating a Board of Health and Quarantine laws was passed by the State Legislature. This law was quite comprehensive, and the regulations were enforced by the police. However, the State appointed body incurred the displeasure and antagonism of the city authorities. Consequently, an Act was passed on March 6, 1819, abolishing the Board of Health, health officer, and quarantine laws, but the governor was invested with the right to establish quarantine by proclamation. In 1821, a severe yellow fever epidemic caused similar laws to be adopted again, and the Board of Health was reinstated. The laws, however, were poorly framed and feebly administered.

The value of an effective quarantine was clearly demonstrated in 1822. Quarantine existed at the river entrance to the city, but none was in vogue from the lake side. Yellow fever was raging at Pensacola. Two boats carrying yellow fever cases from that port, not being able to enter the city through the river, entered through the Lake side by way of Bayou St. John and introduced the epidemic into New Orleans. A protest meeting was held, in 1823, by citizens who believed that the quarantine regulations were injuring the city's commercial develop-

ment. In 1825, the pressure of public opinion aroused by commercial interests resulted in a repeal of the quarantine laws. The City Council, however, was given the right to appoint a health officer and to establish quarantine inside of New Orleans, and the governor was given quarantine powers. Between 1820 and 1830, yellow fever appeared in New Orleans every year, about half of these years in epidemic prevalence. During the next decade, the epidemics of 1832, 1833 and 1839 were disastrous. With the discontinuance of quarantine in 1825, New Orleans apparently had no organized health supervision until 1841. In 1835, however, a strong medical society was in operation, and two physicians were detailed from this body as advisors to the Mayor.

PHYSICIANS FORCE THE CREATION OF A STATE BOARD OF HEALTH

It was at the beginning of the 1830-40 decade that one of our country's most illustrious physician-sanitarians, and certainly the first eminent one in Louisiana, began his rise. From his first published paper in 1832, which is considered Louisiana's first medical classic [12], entitled "The Application of Physiological Medicine to Diseases in Louisiana," Dr. Edward Hall Barton's acuity of observation and perspective, scholarly passion for knowledge, and fortitude in the service of his community destined him to become one of the most distinguished medical scientist-philosophers and men of action of his day. In 1832, he also made a most portentous observation [13] about yellow fever which appeared to be the reason why he later kept insisting on the drainage of the swamps around New Orleans to rid the city of mosquitos. In citing the remark of the 17th century Dutch anatomist and epidemiologist, Diemerbroeck, concerning the uncommon abundance of insects preceding the occurrence of pestilence, Barton observed that "flies and mosquitoes particularly were unusually numerous preceding the epidemic," and that the mosquitoes continued throughout the summer. He was one of the world's pioneers in the development of medical statistics as an instrument of medical science. This work he began around the same time as that of the great French clinician, Pierre-Charles-Alexandre Louis, who is credited with having been the founder of medical statistics, as distinguished from vital statistics.

In the list of Barton's published contributions are to be found wisdom and vision which even today are inspirations to scholars. He was one of the driving forces which shaped the pioneering history of Louisiana to protect itself against epidemic onslaughts. He was the third Dean of the Tulane Medical School, between 1836 and 1840, and was the chief engineer in laying the foundation of the Louisiana State Board of Health.

The decade between 1840 and 1850 was featured by terrible ravages of yellow fever, decimating the population. But still thousands came to New Orleans, lured by the high wages and the stories of possibilities of making fabulous fortunes in a short time. At the insistence of the physicians of the city, a Board of Health and quarantine were established by the General Council in June 1841. After several years the board lost interest, despite recurring epidemics, and was dissolved in 1843. The physicians, however, continued to urge the city to create a Board for community protection, so that in 1844, the General Council invited the Medico-Chirurgical Society to take charge of the sanitary interest of New Orleans. This proposition was accepted, and a committee of nine members was appointed with full powers to act as a Board of Health. The years 1847, 1848, 1849, were among the most disastrous epidemic years in Louisiana history.

The lack of interest and reluctance to act on the part of the city fathers was traditional in New Orleans whose reputation was described by DeBow in 1846: "New Orleans, disguise the fact as we may, has had the reputation abroad of being a great charnel house." Filth and disease stalked hand in hand with death.

Such eminent physicians as Drs. E. H.

Barton, E. D. Fenner, A. F. Axson, and J. C. Simonds will remain alive in Louisiana medical annals for their tireless labors and fearless revelations of local health hazards. They counselled the city officials and endeavored to open their eyes to the grave conditions existing in this thickly populated city. They created the plans to better the conditions—plans that needed only implementation. The dauntless Dr. Barton appeared before the city council in 1850, and predicted dire calamity unless sanitary conditions were improved. His words fell on deaf ears. In January 1851, Mayor Crossman officially proclaimed the city to be perfectly healthful in spite of the fact that the death rate per 1,000 population for 1849, 1850, and 1851 was 78, 84, and 62 respectively as compared to a present day rate of 10.

In 1853, Dr. Barton's prediction unfortunately came to pass. Yellow fever was brought into the city in May. In June it picked up momentum. In July panic broke out. The merchants vigorously denied the "rumors" of epidemic and the newspapers, in collaboration, refrained from making mention of it, although during the week of July 9th, over 400 persons died and Charity Hospital became a busy depot for sending corpses to the grave. People began to flee the city by the thousands. Among them were many members of the city council which adjourned soon after July 22, 1853, belatedly recognizing the epidemic situation and hurriedly passing a resolution authorizing the formation of a Board of Health. The Board was organized on July 26, and the council adjourned on July 28. The fleeing members of the city council left Mayor Crossman to face a tragic and appalling situation. The council did not convene again until the end of the epidemic late in November. The temporary Board of Health was created with Dr. A. Hester, editor at that time of the New Orleans Medical and Surgical Journal, as physician of the port. It was, however, too late. About 30,000 cases of yellow fever occurred in New Orleans during this epidemic with over 7,500 deaths. Many more cases and deaths occurred over the entire state.

The persistent efforts of Dr. Barton, Dr. Simonds, and their fellow physicians began to bear fruit. The people of New Orleans began to learn their lesson in sanitation. The public urged the Board of Health to appoint a sanitary committee to investigate the cause of the epidemic and to make recommendations for future prevention.[14] Late in 1853, the Board of Health appointed such a commission consisting of Honorable A. D. Crossman, Mayor of the City of New Orleans, Drs. E. H. Barton (Chairman), A. F. Axson, J. C. Simonds, J. L. Riddell, and S. D. McNeil. Despite the 1853 catastrophe and the impeachment of the Street Commissioner for dereliction of duty in keeping the streets clean, the city council, in 1854, returned to its traditional apathy toward health. The disgraceful indifference occasioned in the summer of 1854 during the Council's consideration of a much needed Health Ordinance was as culpable as its final action before adjournment of ignominiously laying the Ordinance on the table.

In the face of such gross negligence as was the historically traditional mood of the New Orleans City Council, it was no wonder that Governor Hebert [15] passionately appealed to the State Legislature in 1854 for the creation of machinery for protecting the entire state against epidemic incursions. If New Orleans, the gateway to the state for the importation of disease, were morally paralyzed against acting for the well-being of its citizens and those of the state, then the state itself must perforce go into action.

The State Legislature depended completely on the physicians of the state to give direction to the legislators in the framing of a state law for the protection of the health of the people. To this end, the Senate in 1854 ordered 250 copies of Dr. Fenner's *History of the 1853 Yellow Fever Epidemic* to be printed. The 1854 Legislature, not being fully prepared to pass its health bill, laid it on the table

indefinitely. By the time of the convening of the 1855 State Legislature, the report of Dr. Barton's investigating commission was completed, and was already widely read and discussed with much passionate exchange of views between supporters and antagonists. By joint resolution of the House and Senate, 140 copies of Dr. Barton's report were ordered printed. The testimony of all physicians was pleaded for by the Joint Public Health Committee of the State Legislature in order to guide the creation of adequate and effective legislation. The majority of the physicians held the theory that yellow fever, like other dread disease epidemics, was imported, and therefore, the technique of quarantine was essential for control. Although the Barton report recommended a comprehensive sanitary program for control of epidemic disease, and the Fenner study recommended the same, the State Legislature enacted a law, signed by the Governor on March 13, 1855, entitled "An Act to Establish Quarantine for the Protection of the State." It must, however, be understood from the plea of the Governor, the intent of the House and Senate, the Majority and Minority Reports of the Joint Legislative Committee on Public Health, and the wording of the Act itself, that general sanitation authority was intended for the Board of Health, although quarantine was its emphasized activity. On June 13, 1855, the first permanent State Board of Health in the United States was selected with the eminent and colorful Dr. Samuel Choppin as chairman. Dr. Barton and two other prominent physicians also served on this board. From this date until the reorganization of 1898, New Orleans paid the penalty of being denied the authority to organize its own Board of Health and was dependent on the State Board of Health for advice in matters of public health.

THE PHYSICIANS WHO SERVED THE PUBLIC HEALTH MOVEMENT

In a century of commendable operations, and at times of brilliant achievements, many of the most famous Louisiana physicians served as presidents of the Board or as member participants. Such medical names as Samuel Choppin, A. Forster Axson, Gustavus A. Nott, Charles Delery, Charles B. White, Joseph Jones, Joseph Holt, Samuel R. Olliphant, Clement P. Wilkinson, Edmond Souchon, Oscar Dowling, and John H. Musser had graced its leadership. Among the galaxy of its members and co-workers before the turn of the century were Drs. Warren Stone, William M. Carpenter, Bennett Dowler, N. B. Benedict, Josiah C. Nott, John D. Foster, Abner Hester, H. D. Baldwin, Stanford E. Chaillé, Samuel M. Bemiss, Felix Formento, Andrew W. Smythe, George K. Pratt, Rudolph Matas, Frederick Loeber, Alfred W. Perry, Daniel C. Holliday, Stephen S. Herrick, G. Farrar Patton, Frederick W. Parham, S. C. Russell, Lucien F. Salomon, J. Charles Faget, William H. Watkins, Paul E. Archinard, Charles Chassaignac, Isadore Dyer, Ernest Lewis, and hundreds of others. It can be safely asserted that practically every reputed physician in Louisiana during the period of twenty-five years before and twenty-five years after the establishment of the Board participated in molding the forces which created it and guided its subsequent development. A complete listing of the names of these men would include most of the pioneer medical educators in New Orleans, the organizers and officers of the medical and scientific associations, the editors of the medical journals, the chief surgeons of the Charity Hospital, and men who otherwise made New Orleans famous as a medical center.

Our nationally famous state health officer, Dr. C. B. White, was one of the founders of the American Public Health Association in 1872. He served as second vice-president in 1873, as member of the Executive Committee in 1877-78-79, and was elected to presidency of that Association in 1880. Dr. Samuel Choppin was elected second vice-president in 1878 and first vice-president in 1879. In 1880, Dr. D. C. Holliday was elected to the executive committee, and during these public health

pioneering days many more of our socially oriented physicians played important roles on various committees of the Association which carried on missionary work in the science of community health. Many important papers in public health were delivered by Louisiana physicians at the annual meetings of the American Public Health Association. Dr. Felix Formento, many years a member of the Louisiana State Board of Health, chairman of its laboratory committee which was responsible for the creation of the first state board of health diagnostic bacteriological laboratory in the United States in 1894, and president of the American Public Health Association in 1892, presided as one of the presidents *d'honneur* at the International Hygiene Congress in Geneva in 1882. Dr. Stanford E. Chaillé and Dr. S. M. Bemiss were members of the National Board of Health which was created by Congress in 1878, Dr. Chaillé as its supervising inspector. Both served on the Havana Yellow Fever Commission appointed in 1879, of which Dr. Chaillé was president and of which Dr. Rudolph Matas served as secretary.

Is there any wonder therefore, considering this remarkable activity on the part of our physicians, that during the first two decades of the existence of the American Public Health Association an exceptionally large proportion of its members were physicians from Louisiana. For example, in 1884, more than 10 per cent of the entire American Public Health Association membership was composed of Louisiana physicians. Those men were highly conscious of what it took to control or to eliminate epidemic disease. The articles with which they filled the medical journals were cogent testimonials of their breadth of vision, their scientific and philosophic attainments in the field of knowledge, and the enlightened cultural background with which they approached their professional activities. This is our medical heritage of public health in Louisiana.

The State Board of Health, therefore, was created by the wisdom and fortitude of the most eminent of our medical forebears to serve a basic community need which could otherwise not be attained. This essential instrument of public service has been and will continue to be as effective as the physicians of the State will it to be.

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DISCUSSION

Dr. Guy Jones (Lockport): I wish to compliment Dr. Freedman on his splendid presentation of the history of Public Health developments, and particularly, on the history of the development of the Louisiana State Board of Health, of which I happen to be a member at this time. We are rather proud of the fact that the Louisiana State Board of Health is 100 years old this year, and is the oldest State Board of Health in our nation.

As Dr. Freedman has pointed out in giving his references to the illustrious gentlemen who founded and served on the State Board of Health, these men were principally practicing physicians who recognized the need for a Board which would have the authority by law to require sanitation and to institute preventive measures in controlling and preventing disease epidemics.

One hundred years ago, diseases of all kinds were very prevalent throughout our State. Yellow fever occurred in New Orleans as late as 1905. I am happy to note at this time that many

of the diseases which we used to see, even when I began practicing medicine a few years ago, have become very rare. We have not had a case of yellow fever since 1905. Typhoid fever and malaria, which used to be so common, are very rare today. There can hardly be any doubt but that the efforts of public health in the field of environmental sanitation, mosquito control, and improvement of our water, food, and milk supplies, have played a primary role in the eradication of these diseases.

Due to the generalized practice of immunization against smallpox, diphtheria, and other communicable diseases, these diseases have become quite rare. Public health practices in the field of environmental sanitation and mass immunization, working hand in hand with the practicing physicians, have accomplished a great deal over the years in improving the health of our people.

Tuberculosis and other diseases are on the wane due to the cooperative efforts of public health people in finding new cases of tuberculosis and bringing them to the physicians for treatment.

I could refer to many more situations in which, by team work, we practicing physicians and public health people have been able to improve the health of our community.

A few years ago, the physician was seldom called except when the patient suffered pains, fever, injury, or other distressing symptoms demanding relief. By pointing out that many diseases began early before presenting readily observed symptoms, and recommending that each person consult a physician regularly, there is no doubt but that many lives are saved by seeking the advice of a physician before an incipient disease becomes far advanced and incurable.

In closing, I would like to emphasize the thought that public health is not in competition with the practice of medicine, but is a member of our team, working hand in hand with us toward the goal of a healthier and happier population.

"Public Health is a purchasable commodity, available in large or small quantities, in a variety of packages, and its value increases after purchase. It is a difficult article to place on display or the sales counter. Public Health is sometimes reluctantly bought, but once secured, is not given up. Its best salesmen are major disasters and disease epidemics".

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DIAGNOSIS OF DIABETES MELLITUS

During the coming month the attention of medical societies, physicians, and the public—to some extent—will be drawn to the problems of diabetes, primarily, diagnosis. The Diabetes Detection Drive sponsored by the American Diabetes Association is held each year in November. It is primarily an effort on the part of those physicians who constitute the American Diabetes Association to stimulate our physicians to find, diagnose, and treat as many as possible of the now one million unknown diabetics in this country. This type of activity in the public interest is in accordance with the highest traditions of medicine and well deserves our support.

In the typical—and if typical, usually advanced—case of diabetes the diagnosis is not difficult. In the majority of cases of manifest diabetes needing treatment and undetected the diagnosis is not nearly so obvious. Moss [1] has spoken of diabetes as the great imitator in modern medical practice. In an analysis of the essential facts of 140 patients with diabetes mellitus, only 12 had classical symptoms; 11 had pruritis vulvae and 9 each complained of muscle joint pains and indigestion; 7 each were concerned with routine physical examination and fatigue. The remaining 85 were concerned with 44 other conditions, none suggestively diagnostic of diabetes. Among the vast majority, therefore, of the 140 patients the diabetic condition was masked under symptoms of another syndrome, to which, no doubt, it was contributory. The importance of this is seen when one reflects upon the trend in practice today.

An increasing number of patients go direct to the specialist in whose field they consider that their complaint should be treated. The physician limiting his practice to one organ or to one system looks for organic disease. If he finds it, or if he does not, the condition is handled on its merits, and unless diabetes is specially looked for, it is easy for him not to see in the symptomatology an insidious and complicated disease which may permeate every niche of the body before the symptoms become severe enough to be readily recognized. In diabetes, as in many other conditions, the diagnosis is only found if it is specifically looked for.

The diabetic who consults the ophthalmologist may manifest his disease in a variety of ways. Aside from the vascular changes which are manifest on fundus examination, the patient may complain of blurred vision produced by acute myopia, or of oculomotor or abducens paralysis.

Involvement of the autonomic nervous system may have produced a typical Argyll Robertson pupil in patients who have never had syphilis. In a similar manner in the field of every other specialist there are syndromes which may appear to be organic behind which the precipitating factor is diabetes.

It is of particular importance to mention at this point the syndrome of acute abdomen, simulating such surgical diseases as acute appendicitis, in which actually diabetes is the cause of the symptoms. Moss mentions especially the syndrome of "postoperative diabetes," described as a condition in which the stress of surgery has precipitated clinical diabetes in patients predisposed to the disease. He recommends that all patients should have a urinalysis two days after a major operation, and cautions that sometimes the failure to diagnose diabetes is due to the assumption that glycosuria is the result of a preceding intravenous infusion of glucose.

The physician, therefore, regardless of what field in which he may practice, may render a great service to his patient by routinely suspecting the disease and undertaking appropriate steps to prove or disprove its existence.

Cumulative clinical experience has established certain standards by which the results of tests for glycosuria and hyperglycemia may be judged. Only the moderately advanced and advanced diabetics show glycosuria when fasting. For this reason, it is best that a urinalysis for sugar be taken two hours after a meal containing at least 100 grams of carbohydrate.

The American Diabetes Association considers that the following findings indicate the presence of diabetes with a high degree of probability: the presence of any amount of glucose in the urine accompanied by blood sugar values as follows:

A. Venous blood sugar:
   1. Folin-Wu method—over 130 fasting, over 200 after eating.
   2. Somogyi method, or other methods for true glucose value—over 110 fasting, over 150 after eating.

B. Capillary blood sugar:
   1. Folin-Malmros method—over 140 fasting, over 240 after eating.
   2. True glucose value methods—over 120 fasting, over 200 after eating.

In absence of glycosuria a high renal threshold may exist. Such occurs when the glomerular filtration rate of sugar is impaired more than its tubular resorption. In such a condition diagnosis would have to be made on blood sugar findings. It should be cautioned, however, that the diagnosis of diabetes should not be established upon the basis of only one high blood sugar determination. When results are inconclusive recourse should be had to glucose tolerance determinations concerning which there is considerable variance in technique and in interpretation. Most authorities classify the curve as normal if the blood sugar returns to its initial normal level within two hours.

Diabetes is a disease of increasing incidence. This is because methods are more accurate and because of the increased longevity of the population as a whole. Joslin has estimated that there are 2,500,000 persons living in the United States today who either have or will develop diabetes. Other analysts have predicted that if mortality rates continue to follow the same trend as at present, by 1980, deaths from diabetes will be exceeded only by those from heart disease.

In summary, it may be stated that diabetes is a great imitator; that it is increasing; and that its detection requires a specific effort on the part of the physician.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

ATTENTION ALL MEMBERS

Pursuant to the instructions of the House of Delegates and the Executive Committee, the results of the efforts of the Subcommittee appointed by Dr. Max M. Green, our President, to assist and cooperate with Dr. C. Grenes Cole, your Secretary, in the employment of a full time public relations individual or firm as assistant to the Secretary were reported to a called meeting of the Executive Committee on August 20, 1955.

This Subcommittee was unable to employ a satisfactory full time individual or public relations firm who would answer our needs at this time. However, this Subcommittee recommended to the Executive Committee, as a substitute, that we employ both a public relations firm and an experienced individual in legislative work to represent us for the ensuing year. This recommendation was unanimously adopted by the Executive Committee and in accordance with its instructions, the public relations firm of Perret and Kalman of New Orleans and Mr. Percy J. Landry, Jr., of Baton Rouge, as a field representative, were employed.

We sincerely believe a wise decision has been made in this matter and we respectfully request that all our members cooperate wholeheartedly with us in any programs developed for the future good of our Society, its members and the people of our State.

C. GRENES COLE, M. D.
Secretary-Treasurer

IMPORTANT INFORMATION ON ACCREDITATION OF HOSPITALS

The following are the most recent decisions of the Joint Commission on Accreditation of Hospitals, and should be of interest to staff members of all State and private hospitals.

Medical Staff Meetings are Important!

From the start of the American College of Surgeons Hospital Standardization Program in 1920, the holding of regular medical staff meetings has been one of the standards on which approval of a hospital has been based. In accepting the Standards for Hospital Accreditation established by the College, the Joint Commission on Accreditation of Hospitals endorsed this principle as sound and essential for good patient care.

The sole purpose of hospital medical staff meetings is to improve the quality of patient care by means of a critical review and evaluation of the work of the professional staff. This analysis must be done by the medical staff which should meet at frequent and regular intervals to accomplish this purpose.

Recognizing that differences exist in hospitals because of size, location, and medical staff organization, hospitals have a choice of **one** of the three following methods of fulfilling the medical staff meeting requirement:

1. **Monthly Meetings of the Entire Active Medical Staff.**

   This method is particularly suited in the hospital of less than seventy-five beds which is not departmentalized. It is also well suited in the hospital where the medical staff is small and is organized to function as a committee of the whole.

2. **Monthly Departmental Meetings and Quarterly Meetings of the Entire Active Staff.**

   This method may be adopted when a hospital is well organized and departmentalized, and when it has been found to be more effective than Choice 1 for adequate and efficient review of the work of the staff. More frequent departmental meetings will depend upon the size of the hospital and the number of patients treated. Many hospitals have found it advisable to hold weekly departmental meetings.

3. **Monthly or More Frequent Review of the Clinical Work by the Medical Records and Tissue Committees,** (or by an Audit Committee which combines the functions of these two committees), **Plus Monthly Meetings of the Executive Committee of the Medical Staff and Quarterly Meetings of the Entire Active Medical Staff.**

   If conscientiously carried out, this method is very effective in evaluating the quality of patient care.

Experience has shown that one of these three patterns of medical staff meetings will fit any hospital seeking accreditation, whether it be small or large, rural or urban, affiliated with a medical school or not.

There has been some confusion and misunderstanding among the medical profession and hospitals concerning the following aspects of hospital medical staff meetings:

1. **Frequency and Regularity of Meetings.** The regular monthly meetings as described in Choices 1, 2, and 3 with not less than twelve in each calendar year, are necessary for adequate and effective evaluation of

MEDICAL STAFF MEETINGS REQUIRED FOR ACCREDITATION

CHOICE	Meeting	When Held	Required Attendance*	Purpose and Program	Conditions
1.	Medical Staff	Monthly and not less than 12 meetings in each calendar year.	75 per cent of active staff	Review and critical evaluation of the clinical work in the hospital. Report of Committees.	Suitable in smaller hospitals.
2.	Staff Departments	Monthly or more frequently	75 per cent of active members of department	Review and critical evaluation of work of departments.	May be substituted for (1) monthly staff meeting when hospital is well organized and **all** medical work is covered in departmental meetings and CPC'S.
	Medical Staff	Quarterly	75 per cent of active staff	Report of medical work for preceding quarter presented by representatives of departments or by executive committee.	
3.	Medical Records and Tissue Committees or Audit Committee	Monthly or more frequently	75 per cent of members of committees	Review of all medical work in hospital, as stated in assignment of committee functions	May be substituted for (1) monthly staff or departmental meetings when hospital is well organized and **all** medical work is covered in committee conferences, and reports presented to staff.
	Executive Committee	Monthly	75 per cent of members of Committee	Appropriate study and action on reports of medical records and tissue committees or of Audit Committee.	
	Medical Staff	Quarterly	75 per cent of active staff	Report of medical work for preceding quarter presented by executive committee to medical staff	

* Members may be excused by the executive committee for exceptional conditions such as sickness, absence from the community or medical emergencies.

patient care. This means that such meetings should be held during the summer vacation months, for patients are treated in the hospital during these periods and their care should be evaluated.

2. **Multiplicity of Meetings.** Numerous complaints have been voiced by the medical profession concerning the hardship of forced attendance at medical staff meetings of several hospitals to which they have appointments. This occurs because many physicians accept an impracticable multiplicity of active staff memberships. There is a growing feeling among the practicing profession that a physician should limit his active staff appointments to no more than two hospitals in order that he may best serve his patients and conserve his time and energy. If additional hospital facilities are desired by the physician, he may accept an associate, consulting, or courtesy staff appointment. Administrations of hospitals should cooperate with the medical profession by making beds readily available to physicians with other than active staff appointments.

3. **Combined Hospital Medical Staff Meetings.** In certain areas where the medical staffs of two or more hospitals are identical, there may be a desire to combine the monthly staff meetings of the several hospitals into one time-saving meeting. This is not acceptable, for it defeats the prime objective of a medical staff meeting, the evaluation of the care given patients in a particular hospital.

4. **Attendance at Meetings.** Adequate and effective participation in the evaluation of patient care requires regular, conscientious attendance at meetings of the active medical staff, departments or committees. It is expected that members of the active medical staffs shall attend at least seventy-five per cent of these official meetings, unless excused by the Executive Committee of the medical staff for such exceptional conditions as sickness, absence from the community or because of medical emergencies.

5. The Standard of the Commission on the attendance of staff meetings pertains to the active medical staff members. It is the

decision of the local hospital staff whether the attendance of associate staff members is required.

6. Departmental meetings and clinicopathologic conferences are not required by the Commission, although highly desirable and recommended. These are requirements of the Council on Medical Education and Hospitals of the American Medical Association for training programs.

Remember, the requirements for medical staff meetings of the Commission are minimum for quality patient care. Many hospital staffs exceed these requirements and for this they should be commended.

TO THE MEMBERS OF THE LOUISIANA STATE MEDICAL SOCIETY:

It is through this medium, your Journal, that I invite you to set aside October 28th and 29th to attend the annual meeting of the Louisiana Health Council which will be held in New Orleans at the Jung Hotel. As you know, this organization in this state is similar to the National Health Council being sponsored by the A.M.A. and locally by the Louisiana State Medical Society.

Our program this year is built around the life cycle of man. The first day we will have a panel in which a model family will be created from pre-marital counciling through adolescence of the child. On the program there will be leaders in religion, medicine, nutrition, sanitation, immunization, emotional development of the child, family adjustment, heating and lighting in the home and school, pre-school, teacher and child relationship, exercise and recreation, and general medical care throughout the family cycle. All these subjects will be discussed by leaders in their fields. Following this panel the problems faced in working with exceptional children will be demonstrated by the staff of the Special Education Clinic of Southeastern Louisiana College. This will be followed by a summary of the entire day's program by Dr. F. S. Crockett, Chairman, National Rural Health Committee, A.M.A. On the night of the 28th there will be a banquet with recognition of various celebrities in the field of medicine and health with the dinner speaker being Dr. Charles R. Henry of Little Rock, Arkansas. On Saturday the 29th the program will be a panel discussion on what the rural family and rural physician owe to the community in which they live. This panel will be made up of an outstanding farmer, an outstanding home demonstration expert and the boy and girl winners of the 1955 4-H Club projects. With them will be a physician who knows the obligations of a rural physician. Both programs on the 28th and 29th will be moderated by Mr. Aubrey Gates, National Rural Health Field Representative of the A.M.A.

We believe we have a program that will benefit anyone who will take time to attend this meeting. It is set up on a basis of good will and good public relations. Every doctor and his wife who possibly can should make an effort to attend this meeting. The doctors who are active in the Health Council will be looking forward to your assistance in making this program a success.

M. C. WIGINTON, M. D., President
Louisiana State Health Council

REVENUE BUREAU SUMMARIZES MEDICAL EXPENSES UNDER TAX LAW

Deductible and non-deductible medical expenses for income tax purposes have been summarized by the Bureau of Internal Revenue in a series of rulings that combine new interpretations with a clarification of old rulings. Some examples:

Travel expenses to and from a location where daily visits to a medical clinic are required are deductible but (since 1954) cost of food and lodging are not, except as part of a hospital bill. **On education and training,** special instruction in speech and lip reading for a deaf child are deductible expenses, but not a course of ordinary instruction. Psychiatric care and therapy at specially equipped treatment schools for alleviating mental illness are deductible items, but where cost of instruction at a psychiatric school doesn't represent medical care, it is not deductible. **On health and accident indemnity insurance,** if a policy covers both injury indemnity and medical expense reimbursement, premium cost for latter is deductible but not for former. On **other points,** ordinary exercise rubdown, air conditioner, oxygen equipment, iron lung, special bed board, all are deductible items when prescribed by a physician for an illness, but not food for ulcer patient, maternity clothing, diaper service, wigs or toothpaste.

DIABETES DETECTION DRIVE

This year, as for several years past, the American Diabetes Association is sponsoring a diabetes detection drive for the week of November 13-19. During this week, through the agency of the local medical societies, and with such help from publicity as can be obtained, their detection and education programs in the field of diabetes will be carried out.

The American Diabetes Association is composed of physicians only. Their efforts are dedicated to the furtherance of the general welfare through the acquisition and dissemination of useful and accurate knowledge regarding diabetes mellitus. It undertakes, in the public interest

such activities as will improve the physical welfare of persons having that disorder. Great increase in dissemination of knowledge concerning diabetes has resulted from the activities of this Association.

In the interest of finding hidden diabetics, and in the interest of keeping enterprises that are medical within the profession, it is most desireable that physicians everywhere cooperate in the activities of the Diabetes Detection Drive.

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

WIDER KNOWLEDGE OF CHEMICAL HEALTH HAZARDS NEEDED

The thousands of chemical products developed to make life simpler may only complicate it unless used with care and intelligence.

The Committee on Toxicology of the American Medical Association said recently that there are about a quarter of a million brand name chemical products which may be used in the home, farming, and industry.

All of them may be useful—but handled improperly they may become killers, cripplers, and destroyers of property.

Understanding of the uses and the potential dangers of the wealth of products available is needed to prevent the estimated 3,300 accidental poison deaths which result each year from misuse of chemicals.

The array is so large and so many combinations of chemicals are possible that no complete catalogue of all available products has been made, the committee said.

As part of its campaign to spread information about these products and their hazards, the committee will sponsor a symposium on health hazards of chemicals Dec. 29 during the annual meeting of the American Association for the Advancement of Science, in Atlanta, Ga.

Bernard Conley, Ph. D., secretary of the A.M.A. Committee on Pesticides—which is co-sponsoring the discussion—will be moderator for the symposium. He said the purpose of the meeting is to interpret new knowledge of chemical products to scientists in various fields, so they may in turn use and spread the information.

The committees are working toward development of more intelligent use of chemicals so that their advantages may be enjoyed without dangerous results, Conley said. They do not mean to imply that potentially dangerous chemicals should not be used at all.

"The problem of health hazards has increased with the wider household use of chemicals once found only in industry," he said. "This makes misuse more serious and the necessity for widespread knowledge more urgent.

"There are several thousand basic chemicals used in available products; these can be mixed in an infinite number of combinations and sold under an infinite variety of fanciful names. The products can be changed in composition without notice and even patent office records don't necessarily show the present composition. Thus, a listing of the contents of all brand-name products is impossible to make."

Conley said while no one may know all about all of these products, the danger of poisoning would be greatly reduced by wider understanding of the problem, reasonable care in using any chemical, and careful attention to label instructions.

On the AAAS meeting symposium devoted to the problem in the home, agriculture, and industry will be Lester M. Petrie, M. D., director, preventable diseases service of the Georgia Department of Public Health, Atlanta; Wayland J.

Hayes, M. D., chief of the toxicology section of the Communicable Diseases Center, U. S. Public Health Service, Savannah; Irvin Kerlan, M. D., associate medical director of the federal Food and Drug Administration, Washington; and Mrs. Veronica Conley, assistant secretary of the A.M.A. Committee on Cosmetics, Chicago.

FIND NO MAJOR NEUROLOGIC DAMAGE AFTER 10,098 SPINAL ANESTHESIAS

Results of a study of 8,460 patients given 10,098 spinal anesthetics, one of the largest series to receive "spinals" at one hospital, have revealed no instances of major neurological damage after post-operative follow-ups of as much as five years, it is reported in the **Journal of the American Medical Association** (156:1486, Dec. 18, 1954).

The study was made by Drs. Robert D. Dripps and Leroy D. Vandam at the Hospital of the University of Pennsylvania between 1948 and 1951. Based on their findings and other medical data, they term as "unjustified" the tendency "to assume a cause and effect relationship between spinal anesthesia and a variety of complaints, sometimes appearing years after the anesthesia.

"Our experience indicates that the mortality rate following spinal anesthesia is lower than that recorded after general anesthesia in comparable patients undergoing comparable types of operations."

POISONING TAKES TOLL OF INFANT LIVES

In the United States in 1949-50 the number of deaths from accidental poisoning in children under 5 was 2.6 per cent 100,000 population, or four times that of Great Britain.

One third of them were from drugs—the commonest of which was aspirin.

According to an editorial in the Jan. 22 Journal of the American Medical Association, the problem far exceeds that of leading childhood diseases if you add to accidental deaths the number of children crippled by poisons.

"Anything can be dangerous if taken in excess," the editorial said. "We seem to be a nation of aspirin eaters, and there are few households in which a supply of this drug in one form or another cannot be found." Among the most dangerous to children are sweetened aspirin and aspirin chewing gum.

Other hazards are common household items like, liniment, bleaching agents, lighter fluid, cleaning fluid, insect spray, rat poison, permanent wave solution, shampoo, nail polish remover, antifreeze, detergents, furniture polish, ammonia water, and kerosene.

Because of the problem, a Committee on Toxicology has been established by the A.M.A. to study the health problems of drugs, household goods, and other materials, and to supply educational material to the public. Another important step is the establishment of poison control centers to cooperate with local hospitals.

Most cases of accidental poisoning should be prevented, the editorial said, but when they happen prompt and appropriate treatment can save a life. Cooperative efforts now aiming at solution of the problem "should go far to bring the record of the United States down to that of other highly industrialized countries."

TICK FEVER MAY BE FOUND ANYWHERE

Travel speed and the popularity of western vacations make it possible for Colorado tick fever to show up in any part of the country, U. S. Public Health Service researchers said recently.

In a recent study, virus from the tick which carries the disease was found in patients exposed in California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming. The disease has been found in persons from as far away as Florida, Maine, and New York.

The study of Colorado tick fever distribution was reported in the Jan. 22 Journal of the American Medical Association by Carl M. Eklund, M. D., Glen M. Kohls, M. S., and James M. Brennan, Ph. D., from the U.S.P.H.S. Laboratory at Hamilton, Mont.

Their isolations of virus were first reported in widespread areas outside of Colorado. They said they found virus-carrying ticks in all nine states where patients had been exposed, and in Canada.

The disease differs from Rocky Mountain spotted fever—also carried by ticks—in that it causes no skin eruption and recovery is invariable. Four or five days after exposure to ticks the patient has chilly sensations, headaches, nausea, and, occasionally vomiting. Fever, headache, and backache last about two days, disappear for about two days, and then return for two or three more days.

DELINQUENCY IS NOT FAULT OF PARENTS OR COMIC BOOKS

Banning comic books and blaming parents is too easy and fruitless a way out of the problem of juvenile delinquency, an editorial in the Jan. 8 Journal of the American Medical Association said recently.

"If we want the delinquent to adjust to society we must recognize the importance of providing the sort of society to which a person may reasonably be expected to adjust," the editorial said.

"The delinquent youth has been described as a rebel without a cause," it said. "He is essentially an unhappy person who is looking for a face-saving way to abandon his false bravado. He does not conform to the standards of a society

from which he feels he has been excluded.

"There is always the danger that the public, goaded by one-sided enthusiasts, will seek an easy but superficial and hence fruitless answer to the problem in the banning of certain types of television programs or 'comic' books. . . . Although in many instances parents are partially to blame for the delinquency of their children, this is too easy an indictment to make, and in almost every case other factors in the child's environment will have been found to play a contributing role.

PUBLIC HEALTH ASSOCIATION PUBLISHES NEW MANUAL ON CHILD HEALTH SUPERVISION

A comprehension professional manual on child health supervision, reflecting present-day emphasis on the inter-relationship of physical and psychological factors, was released in February by the American Public Health Association, 1790 Broadway, New York.

The 180-page volume, "Health Supervision of Young Children", has been five years in preparation, and is the product of collaboration by more than 60 prominent professional persons. It bears the endorsement of the American Academy of Pediatrics, U. S. Children's Bureau, National League for Nursing and Association of State Maternal and Child Health and Crippled Children's Directors.

This is the first of a series of manuals being prepared by the A.P.H.A. Committee on Child Health, under the chairmanship of Dr. Samuel M. Wishik of the University of Pittsburgh Graduate School of Public Health. The text was written by Nina Ridenour, Ph.D., staff consultant to the committee.

Priced at $2, the volume can be ordered directly from the Association.

UNREPORTED CASES OF TUBERCULOSIS

More than 25 per cent of the people who die from tuberculosis come to the attention of health authorities for the first time when the death is reported, according to Dr. Robert J. Anderson, assistant chief, Division of Special Health Services, U. S. Public Health Service, who spoke at the Annual Meeting of the National Tuberculosis Association.

Although deaths from tuberculosis have declined 57 per cent in the past five years, Dr. Anderson pointed out that the decline in newly reported cases has been only about three per cent a year and that at this rate "it will take more than a quarter century to achieve in morbidity the progress achieved in mortality in only five years."

Furthermore, even with progress in finding unknown cases of tuberculosis, he stated, "more than 25 per cent of tuberculosis deaths have never been reported as living cases; many are not reported until admission to the sanatorium; one-third of newly reported cases are far advanced."

The number of active cases in the United States is approximately 400,000, according to Dr. Anderson who said that at any one time about one-third are in hospitals, one-third are patients known to be under treatment at home, and one-third are undetected cases. The number of patients in hospitals, he continued, is larger than at any time prior to 1951 but is slightly less than the peak of two years ago. While there are enough beds for those seeking hospital admission in most areas, Dr. Anderson pointed out there are still shortages in some states.

DISEASE THAT MASQUERADES AS TUBERCULOSIS

A disease that masquerades as tuberculosis but is caused by a newly observed "yellow" bacillus, was reported to the National Tuberculosis Association and its medical section, the American Trudeau Society, recently.

Isolation of a previously unencountered bacillus from 17 patients with a disease which resembled tuberculosis in its clinic manifestations was reported by Dr. Lawrence E. Wood of the University of Kansas School of Medicine, **Kansas City, Kan.** Co-authors of the paper were Dr. Victor B. Buhler, **Kansas City (Mo.)** General Hospital, and Dr. Ann Pollack, University of Kansas School of Medicine. The organism, acid-fast but not typical of this group of organisms, is referred to as the "yellow" bacillus because when grown on artificial medium its color varies from cream to yellow, with a leaning toward orange.

Ten of the 17 patients, according to Dr. Wood, had lesions apparently confined to the lung, with the upper lobe involved primarily. Cavities were frequently evident on X-ray. The age of the patients ranged from a baby one-month old to adults of 65 years. Six of the patients have died, said Dr. Wood, five of them of the unknown disease, with information on the sixth incomplete. The disease is apparently inactive in five patients, who no longer have symptoms, and still another has no X-ray or bacteriological evidence of the disease, but complains of slight cough and tiredness; three patients are still being treated, and two have been lost to follow up, said Dr. Wood.

DISEASE PROCESS PRODUCED BY CALCIFIED LYMPH NODES

"Tombstones" marking the spot of conquered disease within the lung may give rise to a new and more serious disease process.

This strange evolutionary pattern was described recently in a paper presented at a scientific session of the Annual Meeting of the National

Tuberculosis Association and its medical section, the American Trudeau Society, at the Milwaukee Auditorium. The paper was by Drs. Laurence K. Groves and Donald B. Effler of the Department of Thoracic Surgery, Cleveland Clinic Foundation, **Cleveland, Ohio.**

The tombstones are calcified lymph nodes, frequently observed on X-ray near the tracheobronchial tree, which are apparently the residue of healed tuberculosis, histoplasmosis, or some other disease, according to Dr. Groves, who presented the paper. But whatever the cause, the calcified node is the "tombstone" of the original disease, he said, and forms "a mechanical basis for a new disease process," known as broncholithiasis. This disease sometimes simulates cancer.

Broncholithiasis is usually caused when the lymph node erodes into the bronchus, although the primary factor in development of the disease may be a long-standing, active, chronic pulmonary pus formation, according to Dr. Groves.

Symptoms of broncholithiasis include a harassing cough, sometimes accompanied by the spitting up of blood and, in more serious cases, by wheezing respirations when eroding nodes cause bronchial obstruction, he stated. A mild case may be treated by relieving the cough, but surgery may be necessary to remove obstruction in severe cases, said Dr. Groves. He emphasized, however, that the surgical procedure is "extremely difficult and hazardous."

IT MAY BE SCURVY—NOT OLD AGE

Vague, general ill-health wrongly attributed to "old age", may be caused by unrecognized scurvy, T. J. Thomson, M. D., reports from Glasgow, Scotland.* A survey of admission to a general hospital in Glasgow over 15 years revealed 100 cases of florid (bright red) scurvy, but, Dr. Thomson points out, for every case of florid scurvy that comes under medical care, there are almost certainly several minor ones that are never seen by the doctor. Scurvy is preventable, he states; however, some people grow indifferent to the simplest dietetic precautions. Fifty-two out of 58 patients whose records gave details of domestic circumstances lived alone or in lodging houses and did their own cooking.

* **Glasgow Medical Journal, 35**:363 (Dec.) 1954.

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BOOK REVIEWS

Menorrhalgia: Menstrual Distress; by William Drinker, M. D., Springfield, Illinois, Charles C Thomas, 1954, Pp. 97, Price $2.75.

This is a comprehensive monograph divided into eight chapters, clearly written and very easy to read.

The book deals with the various phases of menstrual distress due to anatomic irregularities, disturbed physiology and other imbalances.

It includes chapters on pharmaco-physiodynamics; general management; medical and surgical treatment.

ADOLPH JACOBS, M. D.

Music Therapy; by Edward Podolsky, M. D. (Ed.), New York, Philosophical Library, 1954, Pp. 335, Price $6.00.

This is an anthology of authors from varied backgrounds and experience, all dealing in one way or another with the use of music in various medical situations. The range is from the couch to the electric shock room to the operating room table. The authors have one factor in common: their faith and trust in music as a therapeutic tool. Some of the articles show music in an excellent and immediately practical role in the operating room, as with patients undergoing local or spinal anesthesias; others describe its use in a more remotely useful practice, as in diminishing anxiety in neuropsychiatric states.

Some of the concepts put forth, such as the thalamic reflex, seem undemonstrated and then are used rather indiscriminately to bolster interpretations of the effects of music. One criticism could be levelled at the literal use of the terms ego and id as active agents assessing different aspects of music. There is also a tendency in some of the papers to fall into the error of single cause and effect, emphasizing music as the factor of a psychiatric treatment situation.

All in all, this book attempts an overview of a provocative field, but does it in a way that might tend to discourage the reader from pursuing it further.

IRVIN A. KRAFT, M. D.

PUBLICATIONS RECEIVED

Little, Brown & Company, Boston: Peptic Ulcer, Diagnosis and Treatment, by Clifford J. Barborka, M. D., and E. Clinton Texter, Jr., M. D.

W. B. Saunders Company, Phila.: Counseling in Medical Genetics, by Sheldon C. Reed.

Charles C Thomas, Publisher, Springfield, Ill.: The Postural Complex, by Laurence Jones, M. D.; Differential Diagnosis of Leukoplakia, Leukokeratosis and Cancer in the Mouth, by Ashton L. Welsh, M. D.; Anesthesia in Ophthalmology, by Walter S. Atkinson, M. D.

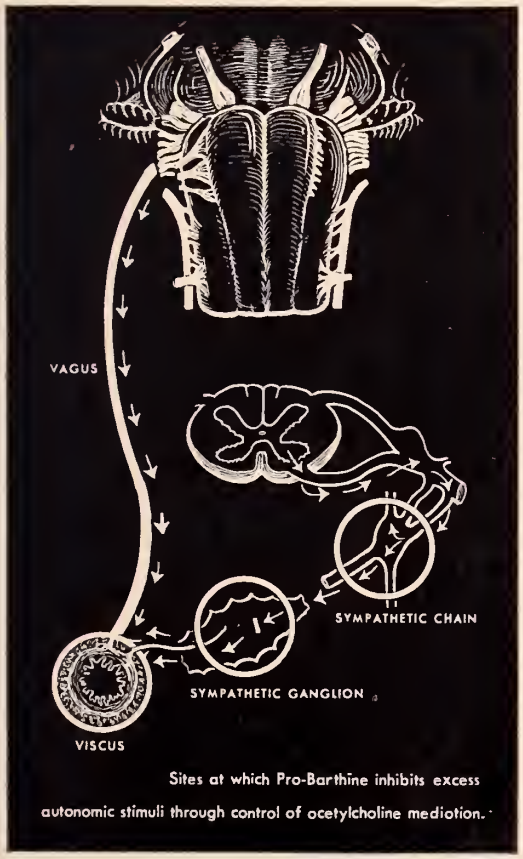
PRO-BANTHINE® FOR ANTICHOLINERGIC ACTION

A Combined Neuro-Effector and Ganglion Inhibitor

Pro-Banthine consistently controls gastrointestinal hypermotility and spasm and the attendant symptoms.

Pro-Banthine is an improved anticholinergic compound. Its unique pharmacologic properties are a decided advance in the control of the most common symptoms of smooth muscle spasm in all segments of the gastrointestinal tract.

By controlling excess motility of the gastrointestinal tract, Pro-Banthine has found wide use[1] in the treatment of peptic ulcer, functional diarrheas, regional enteritis and ulcerative colitis. It is also valuable in the treatment of pylorospasm and spasm of the sphincter of Oddi.



Sites at which Pro-Banthine inhibits excess autonomic stimuli through control of acetylcholine mediation.

Roback and Beal[2] found that Pro-Banthine orally was an "inhibitor of spontaneous and histamine-stimulated gastric secretion" which "resulted in marked and prolonged inhibition of the motility of the stomach, jejunum, and colon. . . ."

Therapy with Pro-Banthine is remarkably free from reactions associated with parasympathetic inhibition. Dryness of the mouth and blurred vision are much less common with Pro-Banthine than with other potent anticholinergic agents.

In Roback and Beal's[2] series "Side effects were almost entirely absent in single doses of 30 or 40 mg. . . ."

Pro-Banthine (β-diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is available in three dosage forms: sugar-coated tablets of 15 mg.; sugar-coated tablets of 15 mg. of Pro-Banthine with 15 mg. of phenobarbital, for use when anxiety and tension are complicating factors; ampuls of 30 mg., for more rapid effects and in instances when oral medication is impractical or impossible.

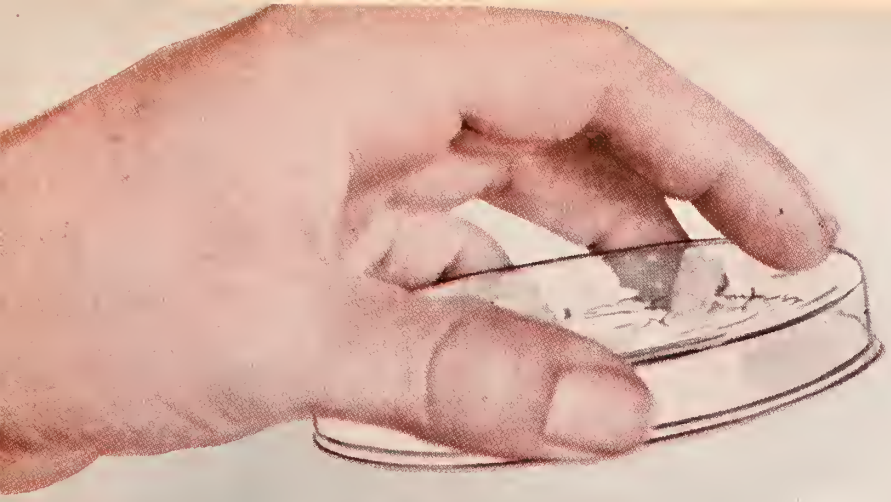
For the average patient one tablet of Pro-Banthine (15 mg.) with each meal and two tablets (30 mg.) at bedtime will be adequate. G. D. Searle & Co., Research in the Service of Medicine.

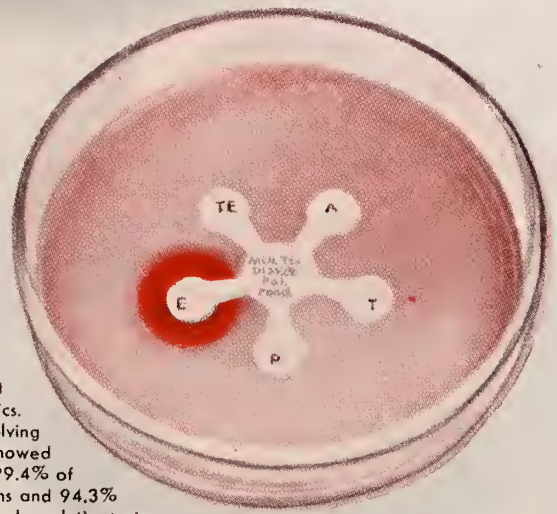
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1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.

2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

SEARLE





DESTROYS ENTEROCOCCI

This blood agar plate shows a strain of *beta* hemolytic enterococcus. Note extreme sensitivity of this organism to ERYTHROCIN—yet it easily resists the other antibiotics. Additional data: A study[1] involving 202 enterococcic strains showed sensitivity to erythromycin in 99.4% of *alpha* hemolytic strains and 94.3% of beta hemolytic strains.

specific against coccic infections

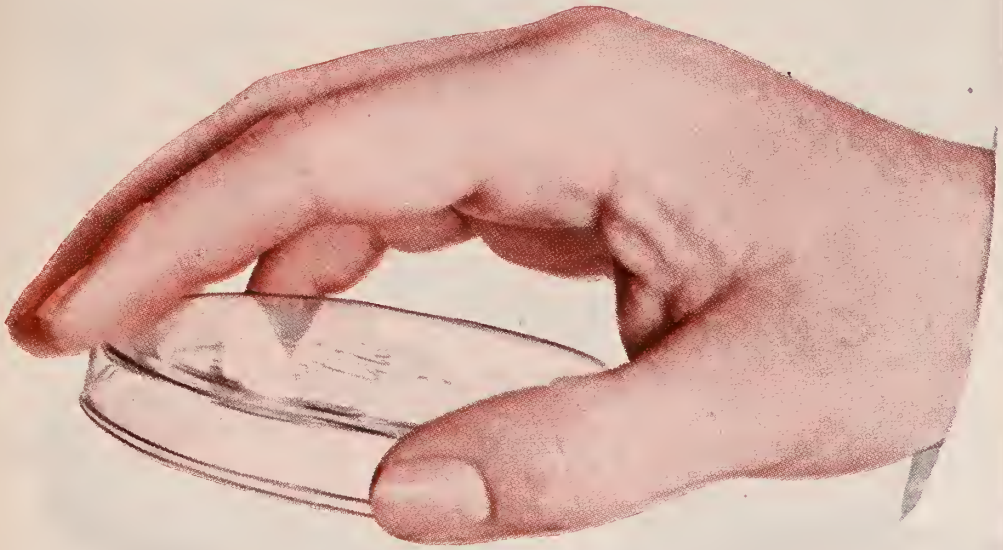
Now, you can prescribe *specific therapy* against staph-, strep- or pneumococci by simply writing *Filmtab* ERYTHROCIN Stearate. Since this coccic group causes most bacterial respiratory infections (and since these organisms are the very ones most sensitive to ERYTHROCIN) doesn't it make good sense to prescribe *Filmtab* ERYTHROCIN when the infection is coccic?

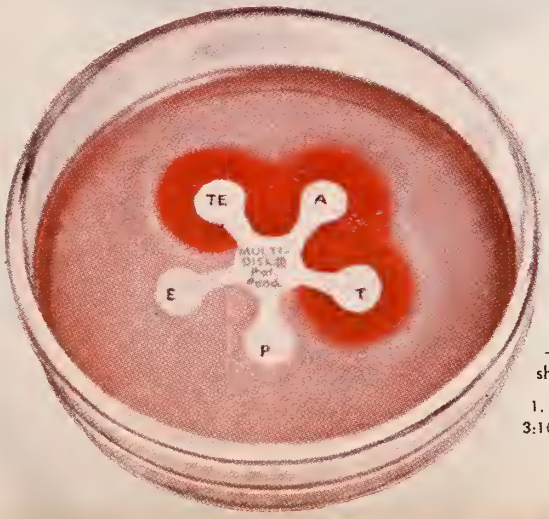
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1. Eisenberg, et al., Antib. & Chemo., 3:1026-1028, Oct., 1953.

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Dowling, H. F.: Practitioner 174:611 (May) 1955.

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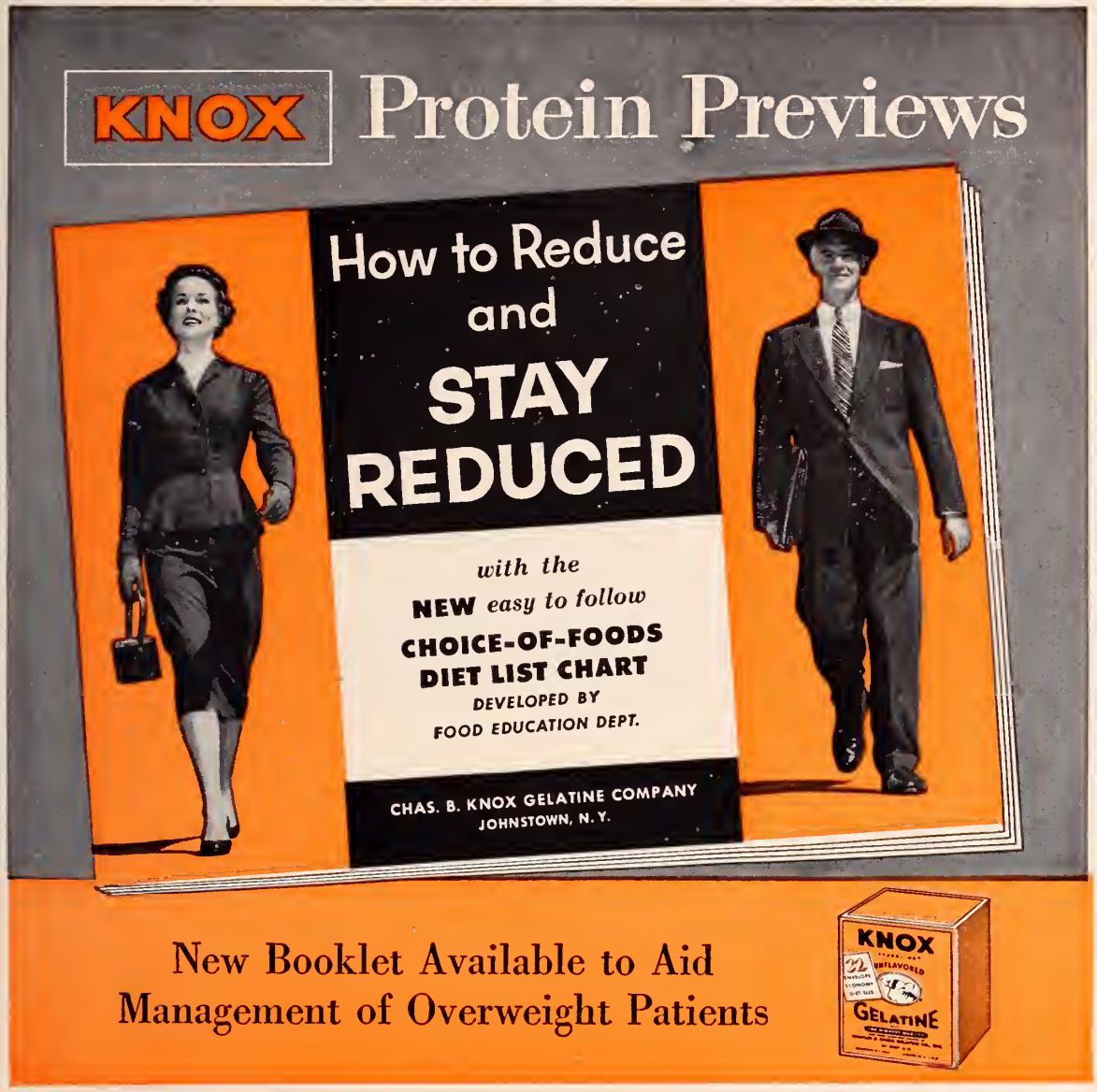
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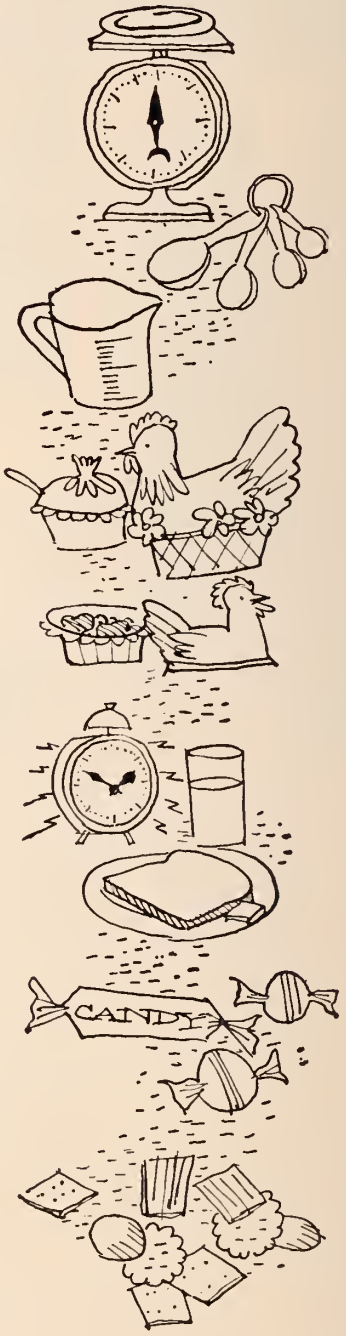
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Suggest that measured portions be served in dishes that fit the serving. A small portion on a large plate is not a happy prospect.

Where possible, let your patient use a food exchange list. He'll delight in the variations it provides.

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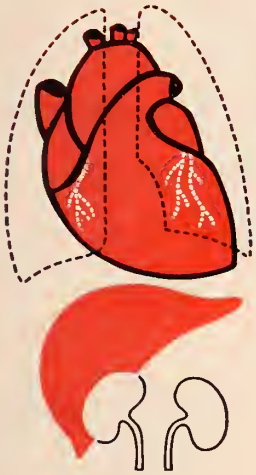
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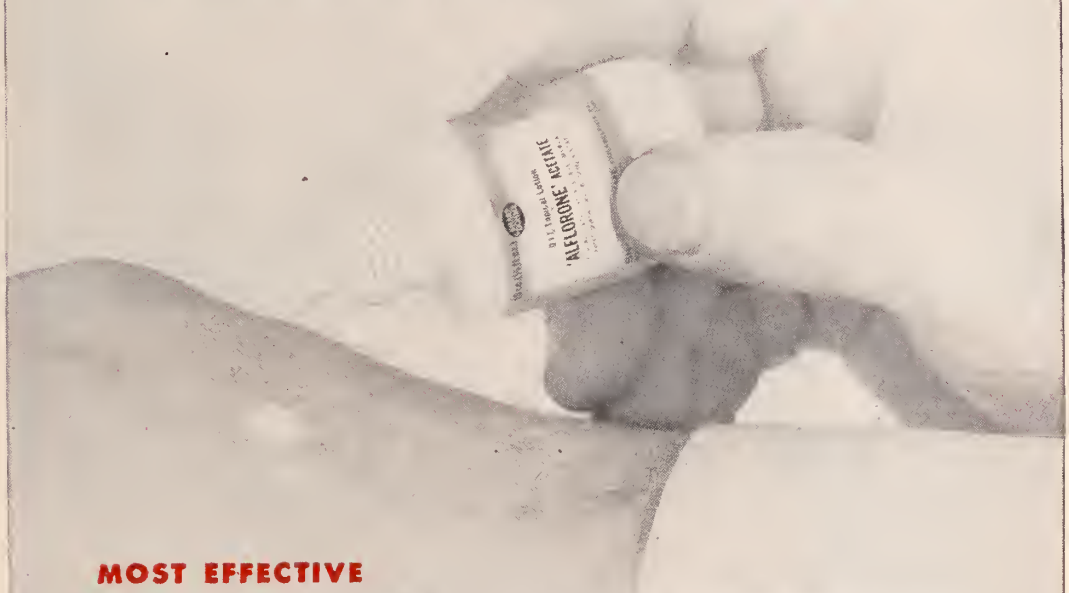
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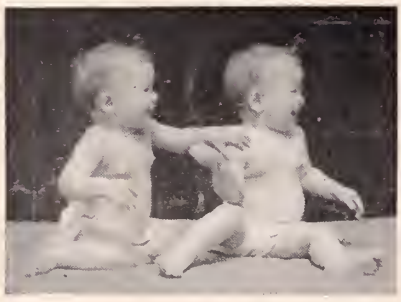


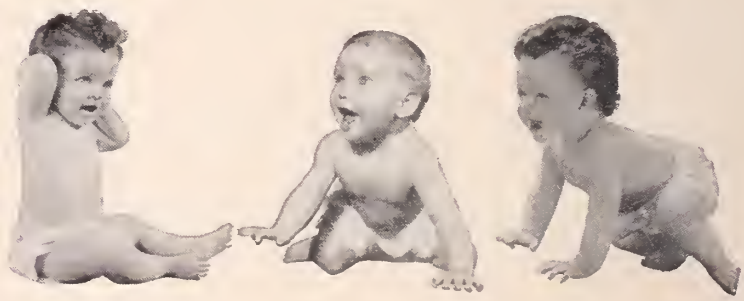
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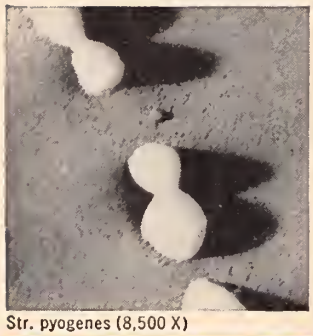
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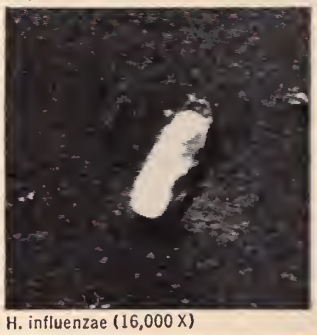
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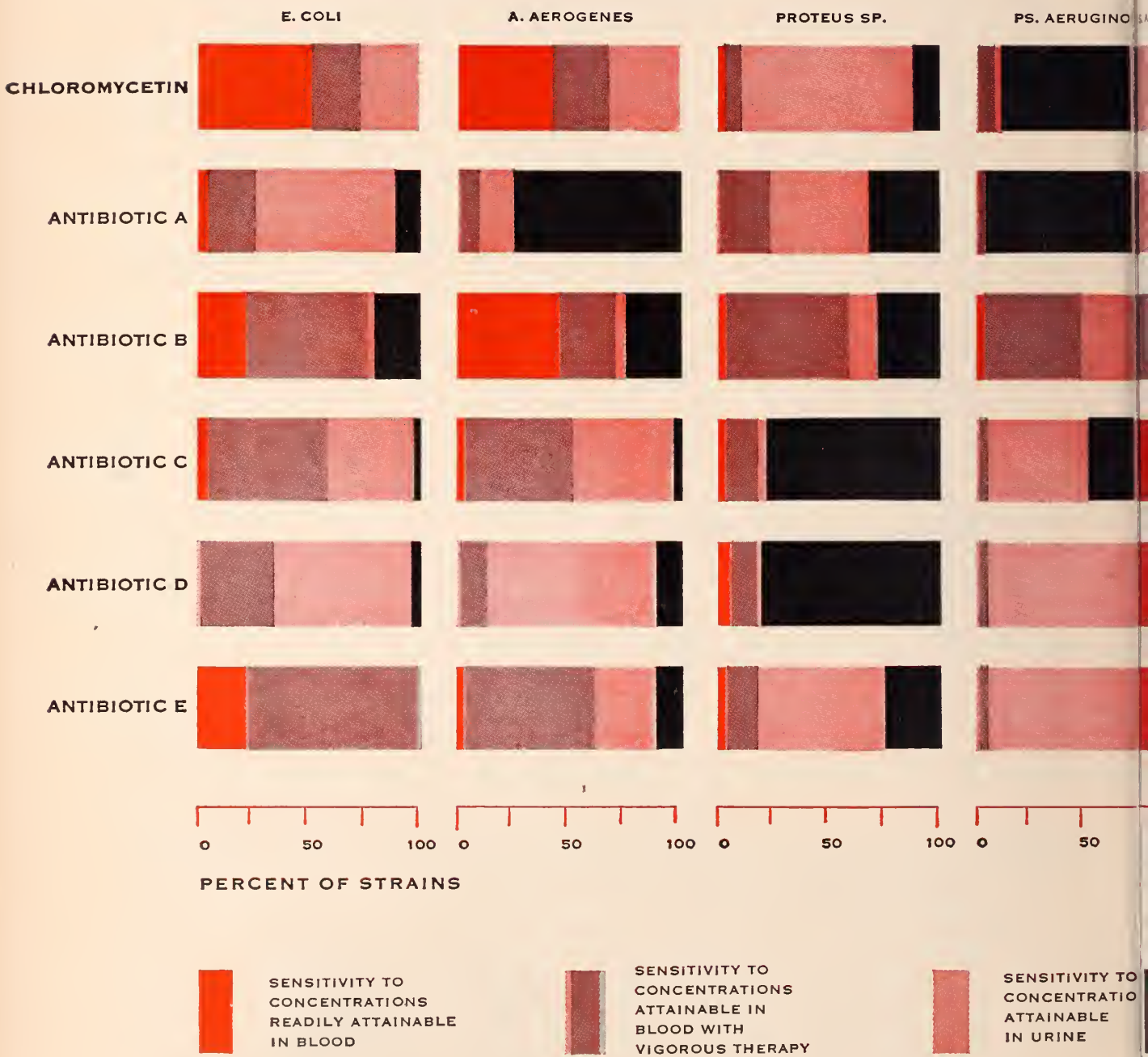
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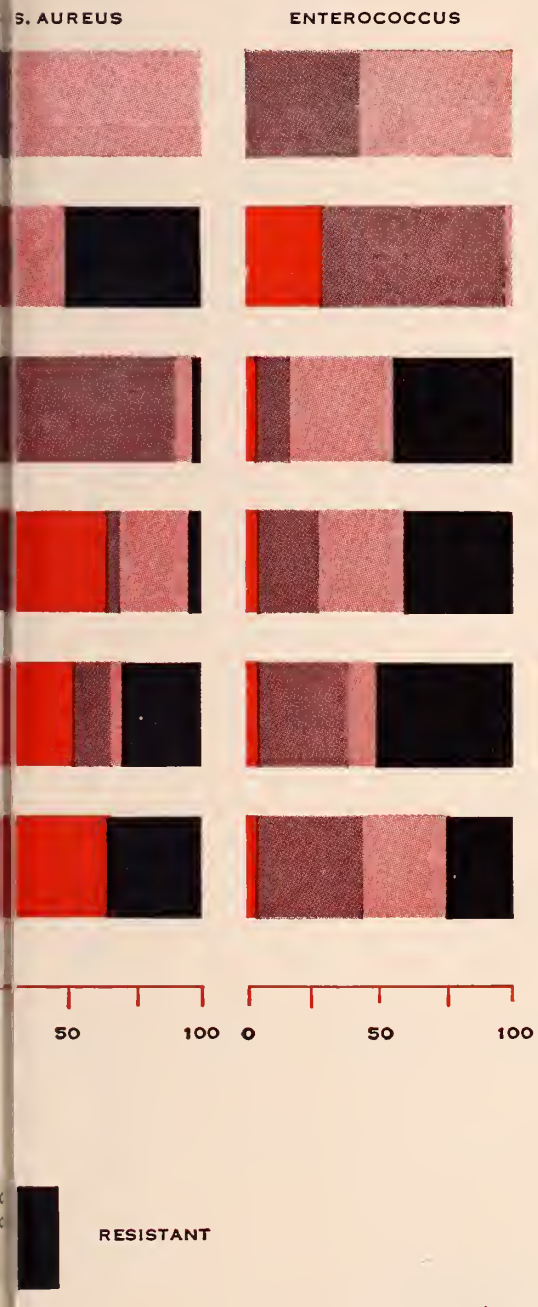
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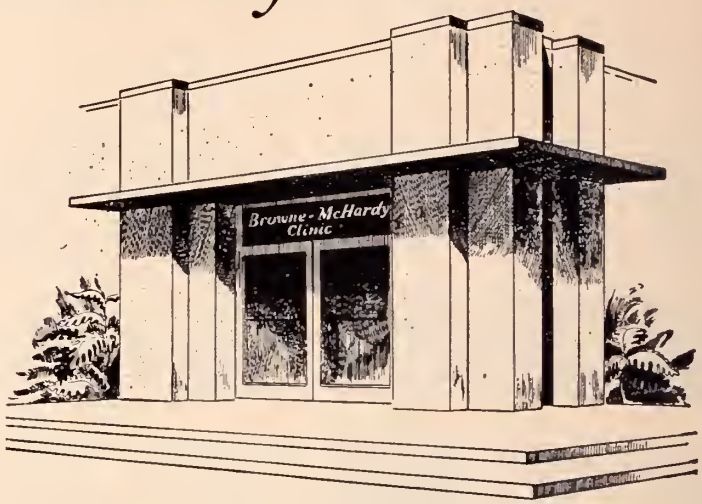
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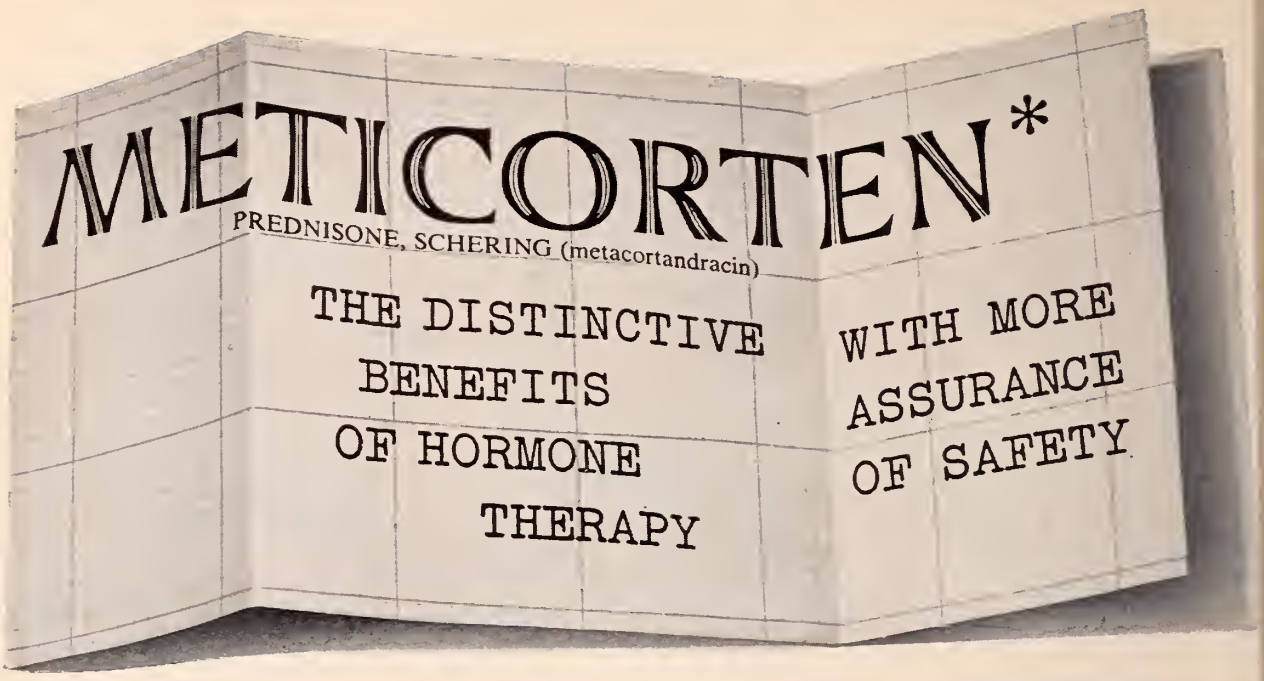
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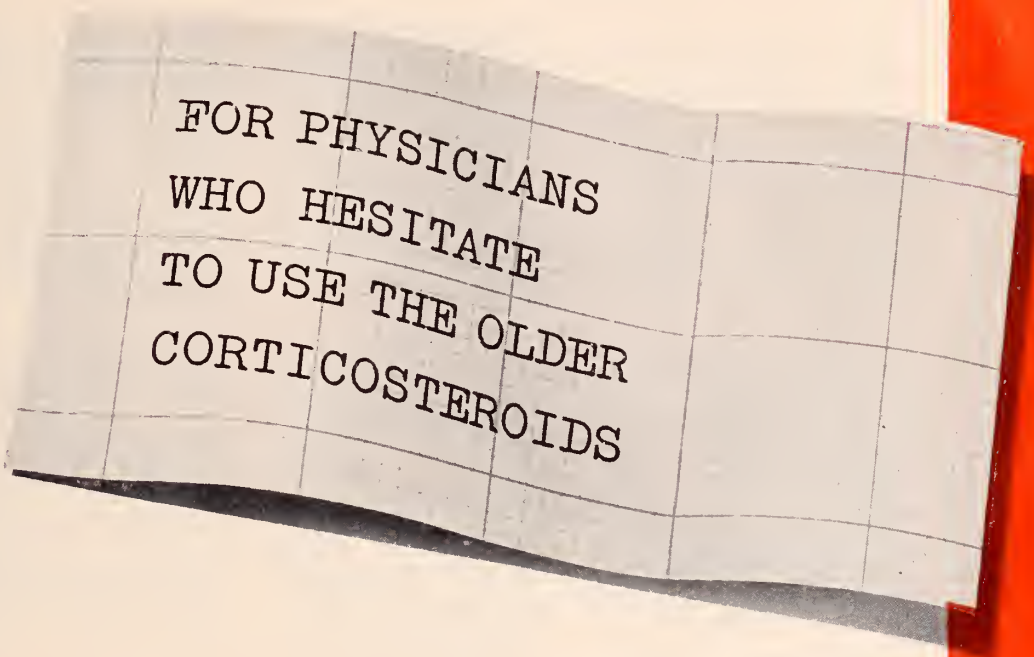
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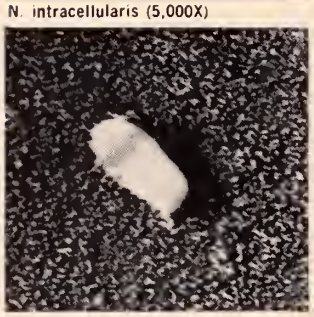
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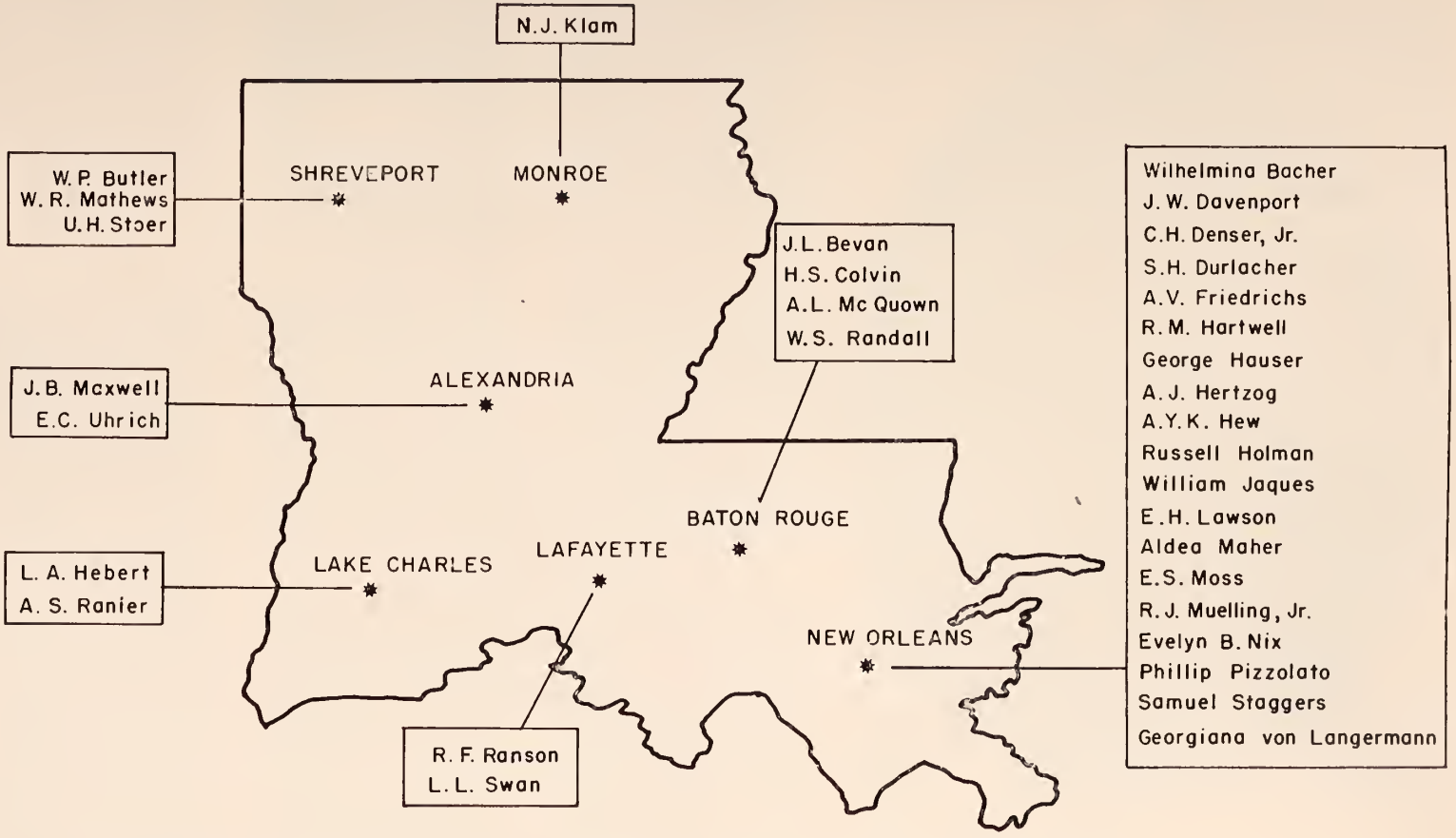
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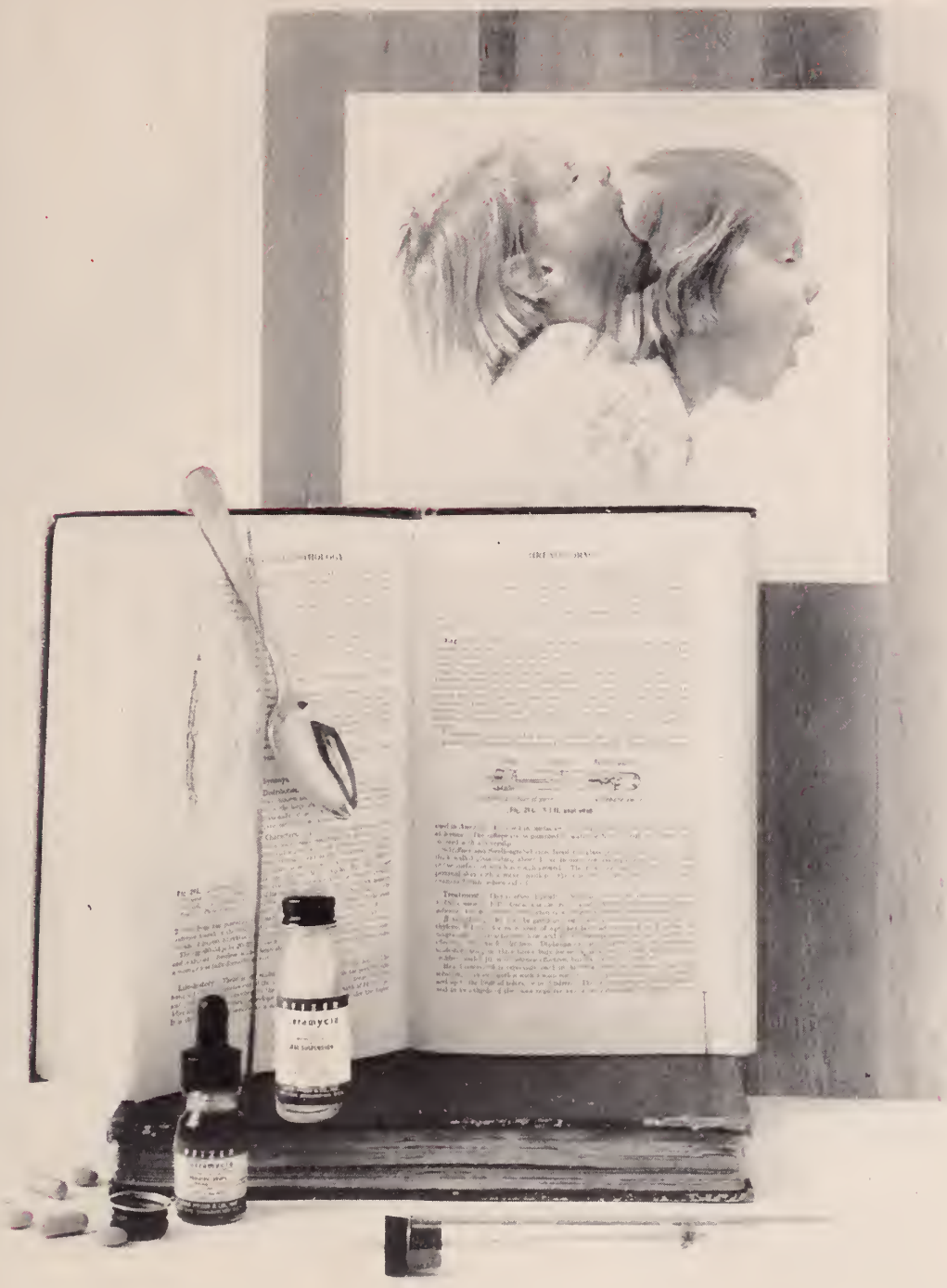
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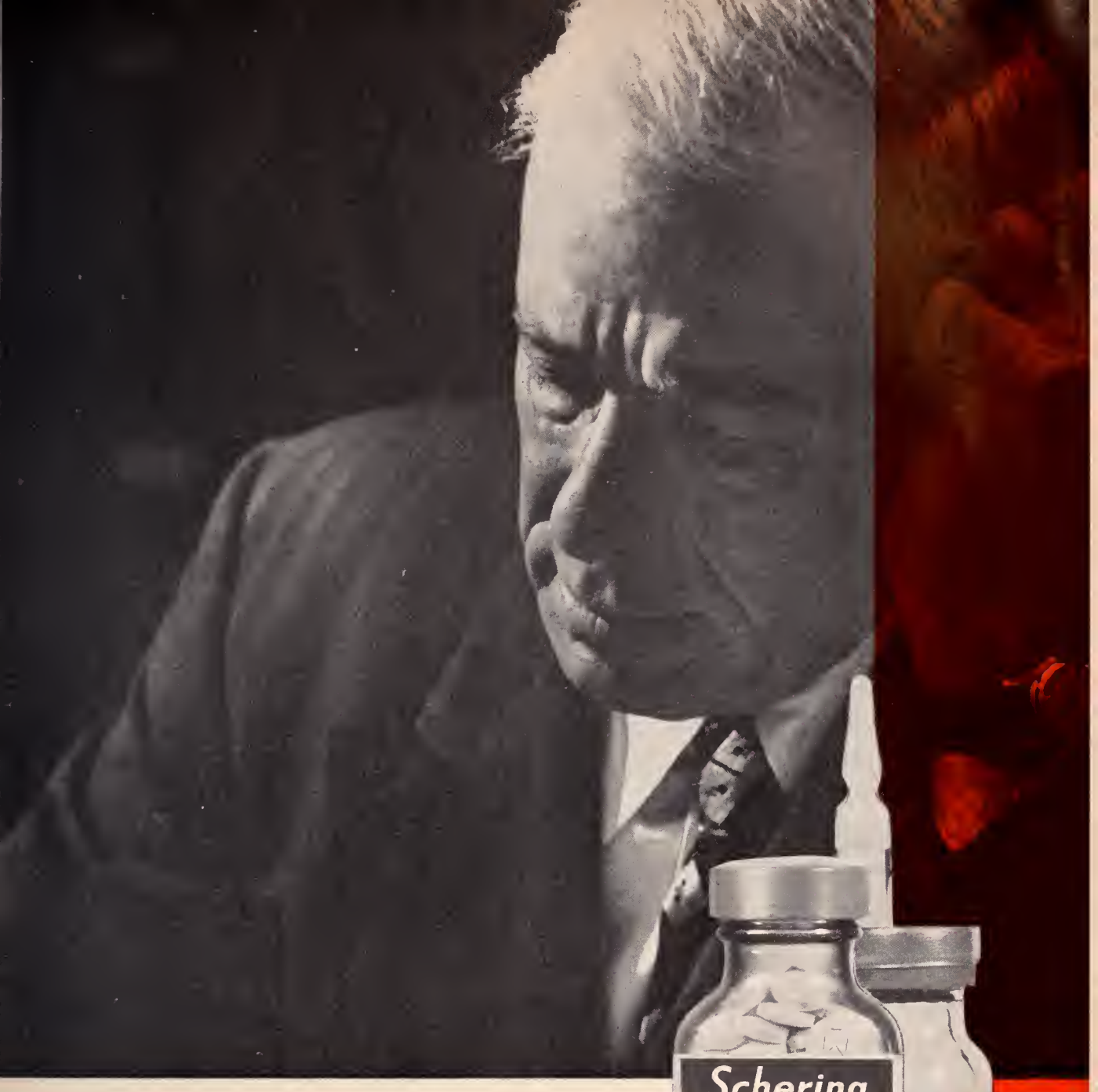
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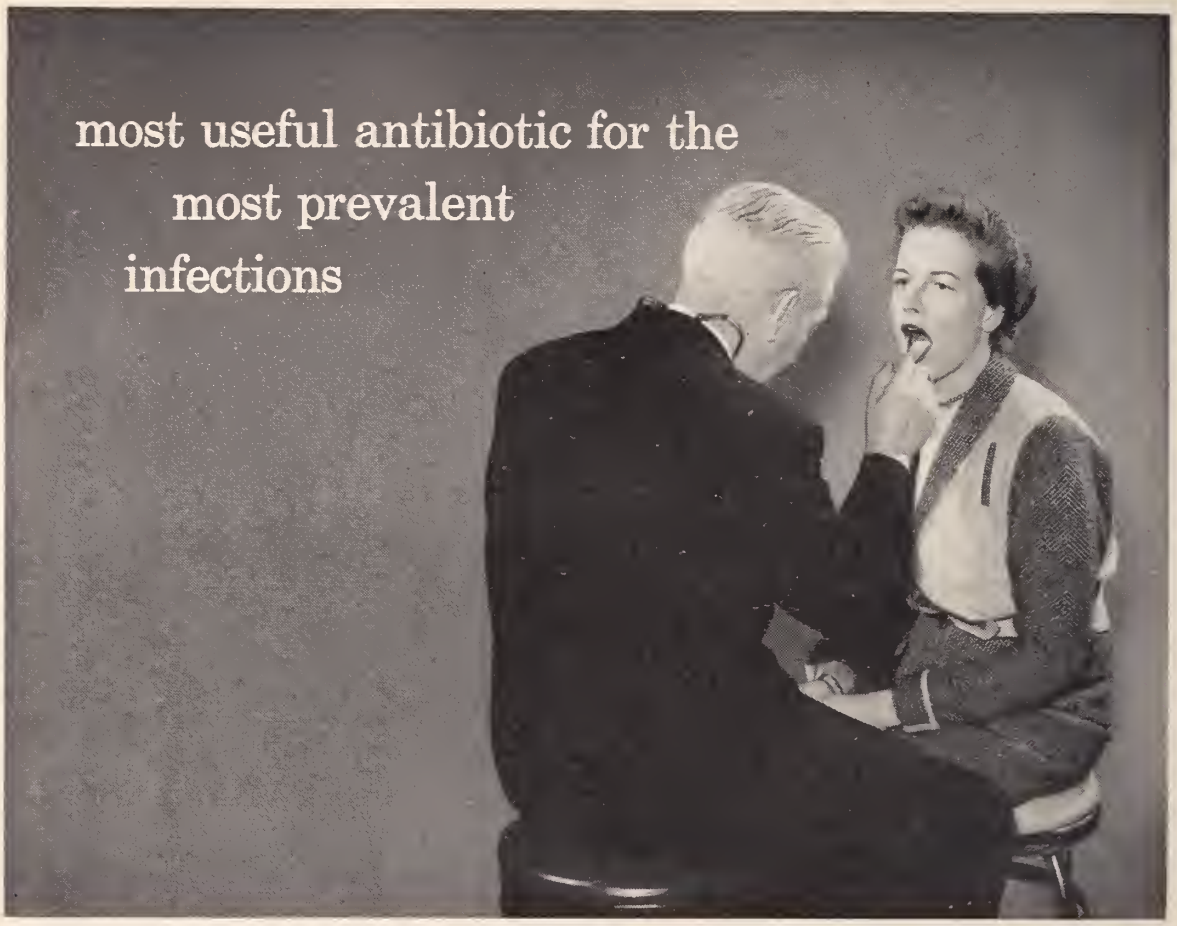
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NOVEMBER, 1955

Published Monthly
1430 Tulane Avenue, New Orleans 12, La.

THE TREATMENT OF BENIGN GOITERS *

B. MARDEN BLACK, M. D. †
ROCHESTER, MINNESOTA

Before proceeding with discussion of the different benign diseases of the thyroid, some mention could well be made of the increased necessity of accurate diagnosis. Until relatively recently, the only effective treatment of any type of goiter, with the one exception of colloid goiter, was thyroidectomy. At present, in addition to simple colloid goiter, many patients with Hashimoto's disease and the majority of patients with Graves' disease may be treated effectively by nonsurgical methods. It is particularly necessary to distinguish between Graves' disease, which may be treated with radioactive iodine, and nodular goiter with hyperthyroidism, which is best treated surgically. The response of the two conditions to antithyroid drugs is also quite different.

NODULAR GOITER WITHOUT HYPERTHYROIDISM

Nodular or adenomatous goiter without hyperthyroidism is by far the most common disease of the thyroid. The nodules may be single or multiple, and the thyroid varies in size from that of a normal gland to that of a huge goiter weighing 1,000 gm. or more. The larger goiters have become somewhat unusual except in the more backward countries of the world. Thyroidectomy, which is the sole effective method of treatment, is obviously indicated if the goiter is large enough to be evident or to produce distortion of neighboring structures, particularly compression of the trachea. A more cogent reason for advising resection of larger goiters is the fact that in a significant, though not precisely known, proportion of cases, thyrotoxicosis ultimately develops. The onset of the thyrotoxicosis occurs without evident change in the goiter, which has usually been present for years, and typically is so insidious that complications, most frequently auricular fibrillation or congestive cardiac failure, may develop before the diagnosis of thyrotoxicosis is suspected. It is most difficult, and, in some cases, impossible to determine if the elderly patient with a large goiter, some hypertension, and congestive failure has hyperthyroidism or is euthyroid. Since the question cannot be resolved by any or all of the tests for thyroid function, thyroidectomy must be carried out at a risk far greater than that associated with the same procedure in the absence of congestive failure. At the present time, death after thyroidectomy could be practically eliminated if surgical treatment could be avoided in the relatively small group of patients with large goiters and congestive heart failure or other visceral complications.

The question of removal of small nodular goiters is somewhat more debatable. Pressure effects are absent, the nodule or nodules in the thyroid are so small that

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the patient is frequently unaware of their presence, and finally, the likelihood of the development of thyrotoxicosis is remote. The sole reason for advising thyroidectomy in such cases is the possibility that a carcinoma, which is unrecognizable as such on clinical examination, is present in the thyroid. The reported incidence of carcinoma in surgically resected nodular goiters in the recent past has varied from 2 to more than 17 per cent.[1] In a critical review of cases in which thyroidectomy was carried out at the Mayo Clinic, Beahrs, Pemberton and I[2] found that occult carcinomas occurred in 3.8 per cent of all cases in which the preoperative diagnosis was nodular goiter without hyperthyroidism. When all cases of nodular goiter without hyperthyroidism, regardless of the preoperative clinical impression, were considered, the incidence of carcinoma was found to be 7.5 per cent. These findings are well in keeping with those presented in the great majority of other recent reports.

Impressive evidence that the incidence of carcinoma in surgical material from the thyroid represents a reasonable estimate of the incidence in nodular goiters in general has been provided by the study of Mortensen, Bennett and Woolner.[3] Among 1,000 consecutive cases studied at necropsy, 28 primary carcinomas of the thyroid were found. The cause of death in one case was carcinoma of the thyroid, and in one other case the thyroid carcinoma was recognized at routine necropsy. In 525 cases nodules were present in the thyroid, giving an incidence of occult carcinomas among the nodular goiters of approximately 5 per cent, which is of course identical with that in surgical material. The fact that only the two carcinomas were found on routine necropsy may well explain the failure to find occult carcinomas at necropsy by others. The remaining 26 cases were discovered only when all nodules in the thyroid were studied meticulously, as is customary in the examination of surgical specimens.

In general, the possibility of the presence of cancer would seem sufficiently high to warrant removal of nodular goiters. In practice, many other aspects of the individual case must be taken into consideration. There is little debate regarding the necessity of resecting the thyroid when the nodule is single, as when a nodular goiter occurs in a young adult or particularly in a child. The likelihood of cancer is greater in nodular goiters of men than in those of women. Conversely, when the nodules are soft and multiple and the patient is an older woman, the indications for thyroidectomy are less well defined. In the case of older patients in general, the occult carcinomas are practically always of the type which progress so slowly that death occurs from other causes before the lesion advances to the stage of producing symptoms.

NODULAR GOITER WITH HYPERTHYROIDISM

Nodular goiter with hyperthyroidism is also best treated by subtotal thyroidectomy, in spite of the increased risk of operation and the decreased incidence of carcinoma, which is approximately 1 per cent.[2] The control of the thyrotoxicosis by both radioiodine and antithyroid drugs is somewhat uncertain and is likely to require a prolonged period. The goiter persists with either method of treatment. The principal disadvantage of the antithyroid drugs is the time necessary to abolish the thyrotoxicosis; that of radioiodine is the excessively large dose of the isotope that usually must be employed. The same limitations apply in the preparation of such patients for thyroidectomy. Possibly the only circumstance in which radioiodine might be employed would be in the case of the patient so ill that the risk of thyroidectomy would be prohibitive. In this case, a large dose of radioiodine might be given, hoping that the thyrotoxicosis could be controlled sufficiently to permit thyroidectomy at some later date. Any such effort to improve the desperately ill patient's condition, using antithyroid drugs, would almost certainly fail because the prolonged period necessary to achieve control would not be available.

GRAVES' DISEASE (EXOPHTHALMIC GOITER)

In contrast to the treatment of adenomatous goiter associated with hyperthyroidism, which is essentially surgical, Graves' disease may be treated effectively by subtotal thyroidectomy or by the administration of radioiodine or antithyroid drugs. Each method will be discussed separately.

Antithyroid Drugs. — The antithyroid drugs have been virtually abandoned as definitive treatment. If they are given in adequate amounts, it is possible to control the hyperthyroidism in practically all cases. Toxic reactions, particularly leukopenia and agranulocytosis, which occurred not infrequently with thiouracil, are quite uncommon with more recent drugs such as propylthiouracil or methimazole (tapazole), and do not contraindicate their use. Such drugs have proved rather impractical in competition with other methods of treatment, essentially because of the prolonged period during which treatment must be continued. As Williams[4] found some nine years ago, after treatment for as long as a year, relapse occurs promptly in approximately half of the cases when the drug is withdrawn. Treatment, of course, may be reinstituted, but relapse on discontinuing use of the drug apparently can occur after any period of treatment until the disease has run its course. The patient must be carefully followed throughout the period of treatment not only because of the occasional development of complications, but particularly to be certain that the thyrotoxicosis is being kept under control. In actual practice, the treatment most commonly fails because the disease is not controlled, or because the patient or the physician discontinues treatment.

The limitations with respect to time do not hold in the preparation of patients for thyroidectomy. The dose must be sufficiently high to control the thyrotoxicosis. In the case of propylthiouracil, which is probably as effective as any of the drugs currently available, the starting dose is from 400 to 600 mg. per day. After two to three weeks the dose may be reduced progressively to a maintenance dose of 100 to 150 mg. per day. Unless the patient is unusually ill, either because of the severity of the thyrotoxicosis or from its effects, Lugol's solution (strong solution of iodine) in a dose of 30 drops a day can be started when the basal metabolic rate has fallen to approximately +20. Administration of the antithyroid drug is stopped about one week later, while administration of the Lugol's solution is continued for ten to fourteen days when thyroidectomy is carried out. Lugol's solution should always be given before the thyroidectomy to insure against crisis, and to produce involution of the hyperplastic thyroid. When patients are unusually ill, it is probably wise to continue to control the hyperthyroidism medically until they have recovered from the effects of the disease, an interval of perhaps two or three months.

The use of antithyroid drugs in preparation for thyroidectomy is probably not necessary in cases of Graves' disease of the usual intensity. The risk of thyroidectomy after preparation with iodides alone in such cases is not materially greater than that associated with resection for nontoxic goiter, and consequently the increased time and effort necessary to prepare patients with antithyroid drugs do not seem warranted. Conversely, the only disadvantage associated with preparation with antithyroid drugs of all patients is the increased time required and the rare development of toxic reactions.

Radioactive Iodine. — Unlike the antithyroid drugs which act by preventing the synthesis of thyroxin, radioactive iodine produces its effects by destruction of the thyroid gland. The same result is thus achieved as with subtotal thyroidectomy, without the disadvantages of a surgical procedure and hospitalization. A tracer dose is given to determine the uptake of the isotope by the thyroid. The weight of the thyroid is estimated and the therapeutic dose is then calculated. The range in dose commonly employed is from 100 to 200 microcuries per esti-

mated gram of thyroid tissue. With the smaller dose, the hyperthyroidism can be expected to persist in many cases, and subsequent doses will be required. With larger doses, control of the thyrotoxicosis is more likely, but myxedema develops in perhaps one third or more of cases. Errors in dosage may result from gross errors in estimating the weight of the thyroid, and from the fact that the uptake of the therapeutic dose may differ from that of the tracer. There is some tendency at present to employ smaller doses and to repeat the treatment if necessary in milder cases, in which immediate control is not imperative. Conversely, in cases of severe thyrotoxicosis, and in those in which there are complications, larger doses are used in order to control the thyrotoxicosis as rapidly as possible, even at the cost of myxedema. At the range of dosage used to treat Graves' disease, there are no immediate ill effects, such as radiation sickness, leukopenia or discernible injury to neighboring structures.

The only known possible complications of treatment with radioactive iodine are genetic effects and the possible ultimate development of carcinoma of the thyroid. In view of the former, radioactive iodine should not be used to treat women during child bearing years unless there is a strong contraindication to thyroidectomy. The method is even more strongly interdicted during pregnancy, particularly after the third month when the fetal thyroid begins to concentrate iodide.

The incidence of carcinoma of the thyroid after treatment with radioactive iodine is as yet unknown. The incidence will not become known with certainty until far more time has passed. However, large numbers of patients have been treated since the isotope was first released for clinical trial in 1946. So far, no case of carcinoma has been reported following its use. Until more information does become available, it would seem wise to limit treatment to older individuals. At the Mayo Clinic, radioactive iodine is used freely to treat Graves' disease in individuals of perhaps 50 years of age or older. Its use in younger persons is limited to those in whom there is some contraindication to thyroidectomy, to those with a decreased expectancy of life and to those, in some cases, with recurrent Graves' disease. The proportion of patients treated with radioactive iodine has increased each year since 1946. At present at the Mayo Clinic, more than 60 per cent of patients with Graves' disease are being treated with the isotope.

OTHER CONDITIONS

Colloid Goiter.—The slight diffuse enlargement of the thyroid which may occur at puberty and during pregnancy requires no treatment. More definite colloid goiters should be treated with desiccated thyroid. If there is no response to treatment within two to three months, or if palpable nodules persist in the thyroid, thyroidectomy is indicated. True colloid goiter is rare and may be confused easily with multiple adenomatous goiter, particularly when the adenomas are unusually soft.

Acute Diffuse Thyroiditis.—Acute diffuse thyroiditis (granulomatous thyroiditis, subacute thyroiditis) is a self-limited disease characterized by exquisite tenderness of the thyroid, marked increase in the sedimentation rate, and frequently by some increase in the basal metabolic rate. Treatment is usually indicated because of the disability associated with the extremely tender gland. Reasonably good results have been reported after external irradiation, and antithyroid drugs have also been used. More recently, cortisone is becoming the drug of choice. Treatment with cortisone is apparently symptomatic only, since the symptoms recur promptly if use of the drug is discontinued before the disease has run its course. Rarely, course is unusually prolonged or when the thyroidectomy may be indicated when the diagnosis is in question.

Hashimoto's Disease.—Hashimoto's disease is readily confused with nodular goiter without hyperthyroidism. In the past, little effort was made to distinguish between the two since in either case thyroidectomy was carried out. Surgical

treatment of Hashimoto's disease is far from being entirely satisfactory, since myxedema almost invariably ensues. It has been found recently that the size of the goiter can be reduced by treatment with desiccated thyroid. This treatment is apparently effective in fully half of all cases. It is not known whether the patients will become myxedematous when the medication is discontinued. Undoubtedly many will, since myxedema is not uncommon in untreated patients. If the possibility of Hashimoto's disease is considered, the diagnosis can be made with some certainty by the characteristic firm, diffusely nodular enlargement of the thyroid, the slightly decreased basal metabolic rate, and the increased uptake of radioactive iodine. A biopsy specimen may also be secured with the Silverman needle. Rather large doses of desiccated thyroid may be necessary. Objective change in the size of the thyroid should be evident within three to six months. If the goiter does not regress or if nodules persist, thyroidectomy is indicated, as in the case of colloid goiter treated medically.

Reidel's Thyroiditis.—Reidel's thyroiditis is extremely rare. The clinical findings are those of carcinoma of the thyroid, and consequently thyroidectomy is indicated in all cases. It is usually impossible to remove safely the entire fibrous mass. Every effort should be made at operation to secure an adequate biopsy specimen and to free the trachea.

SUMMARY

Colloid goiter and Hashimoto's disease may be treated effectively by desiccated thyroid. If the goiter does not disappear, or if nodules persist, thyroidectomy is indicated. Adenomatous goiters, with or without hyperthyroidism, should be removed surgically, essentially because of the incidence of occult carcinoma in nontoxic goiters, and because adenomatous goiters with hyperthyroidism respond poorly to both antithyroid drugs and radioactive iodine.

The use of antithyroid drugs should be limited largely to the preparation of patients with Graves' disease for thyroidectomy. Subtotal thyroidectomy and radioactive iodine are equally effective in the treatment of Graves' disease. Until the incidence of carcinoma after treatment with radioactive iodine becomes known, such treatment should probably be reserved for individuals of 50 years of age or older.

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DIAGNOSIS OF NONDIABETIC HYPERGLYCEMIA AND MELITURIA *

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Most of us, from our own clinical experience, know how shocking it is for a patient to be told he has diabetes. He forsees countless dangers and hardships. As time goes on he finds his efforts to establish financial security through life insurance are impeded. The diabetic regimen becomes irksome and any laxity is apt to bring with it a sense of guilt, if nothing worse. Consequently, to diagnose a trivial deviation of carbohydrate metabolism as diabetes mellitus is a considerable error. Perhaps equally or more serious is the error of failing to recognize the case of impaired glucose tolerance whose cause, though it may seriously threaten the patient's life, is correctable or controllable.

Before long, in most discussions of diabetes, one is confronted by hard questions of definition. Let us deal at once with two of these. The first is the definition of diabetes mellitus itself. I know of no universally acceptable definition of diabetes. My own preference is the one

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which defines the disease as one of unknown cause characterized by permanent impairment of glucose tolerance. This definition has many faults. Its great virtue, in the present context is, I believe, that it leads one to separate from the vast mass of true diabetic patients those cases of impaired glucose tolerance and melituria with recognizable cause.

The second definition is that of blood sugar. In most laboratories the Folin-Wu or some similar technic is used for blood sugar determinations. These technics measure in one lump, so to speak, not only glucose but also a number of other reducing substances, such as glutathione, cysteine and ergothioneine, which, as far as I know, have little or no significance in the diagnosis of diabetes. This defect of the Folin-Wu technic has been known for decades but it was thought that nonglucose reducing substances contributed a fairly constant component (20-30 mg. per 100 ml.) to the value obtained for blood "sugar" concentrations and were therefore unimportant in detection of hyperglycemia. That this is not correct was emphasized by Mosenthal and Barry [1] several years ago. Schales and I [2] have confirmed their observations using a method of determination devised by Schales and Schales [3] and which, we believe, measures only glucose. We found, in 332 samples of blood, that the differences between the values for total reducing substances (the values obtained by the Folin-Wu technic) and those for glucose varied from 6 to 75 mg. per 100 ml. In a number of instances blood which contained a normal concentration of glucose seemed to be hyperglycemic because of a large concentration of nonglucose reducing material. I cannot point to any specific case in which high concentrations of nonglucose reducing material in blood have led to the erroneous diagnosis of diabetes but the possibility of such an error occurring is worth keeping in mind.

NONDIABETIC CAUSES OF HYPERGLYCEMIA

Table 1 lists some nondiabetic causes of impaired glucose tolerance. It is a formidable list and space does not permit a detailed discussion of each item in it.

TABLE 1
SOME CAUSES OF NONDIABETIC IMPAIRMENT OF GLUCOSE TOLERANCE *

A.	Diet—carbohydrate starvation
B.	Exogenous hormones
	1. During treatment with some adrenal cortical hormones or ACTH
	2. (?) After treatment with insulin
C.	Obesity
D.	Hepatic insufficiency
E.	Glycogen storage disease (von Gierke's disease)
F.	Certain pancreatic lesions
	1. Carcinoma of the pancreas
	2. Acute pancreatitis and sequela
	3. Postpancreatectomy state
	4. Islet cell tumors
G.	Postgastrectomy state
H.	Certain endocrinopathies
	1. Acromegaly
	2. Cushing's syndrome
	3. Pheochromocytoma
	4. Hyperthyroidism
I.	Certain brain injuries
J.	Non-specific "stress"; e.g., burns, acute and chronic infections, surgical operations

* Galactosemia is associated with a high blood level of galactose and consequently of reducing material. The blood glucose level tends to be low.

And this is neither necessary nor appropriate. We all know that in a small proportion of patients given cortisone or ACTH, for their pharmacologic effects, impaired glucose tolerance develops; that there is a high incidence of impairment of glucose tolerance in the obese and that reduction of obesity may be accompanied by return of glucose tolerance to normal; that elimination of most or all of the body's supply of islet cell tissue, whether by inflammation, neoplasm, or operation, results in hypoinsulinism and impaired glucose tolerance; and that Claude Bernard produced *piqure diabetique* by puncturing the floor of the fourth ventricle. Almost as well known is the high incidence of impaired glucose tolerance in acromegaly, Cushing's syndrome, pheochromocytoma and hyperthyroidism. Less well known, perhaps, is how profoundly glucose tolerance is influenced by diet, the previous administration of insulin, and hepatic disease; the paradoxical impairment of glucose tolerance among patients

suffering from hypoglycemic attacks due to islet cell tumors; and the curious hyperglycemic-hypoglycemic glucose tolerance curve of the postgastrectomy state. Well known, but worthy of emphasis here, is the effect of stress on the body's disposal of glucose. Lawrence [4] has seen "many patients condemned to diabetic treatment from neglect of this fact [effect of 'toxic and septic' conditions on glucose tolerance] whose tolerance became normal when such conditions as purulent sinusitis and the like were cleared up."

Figure 1 illustrates the effect of diet on

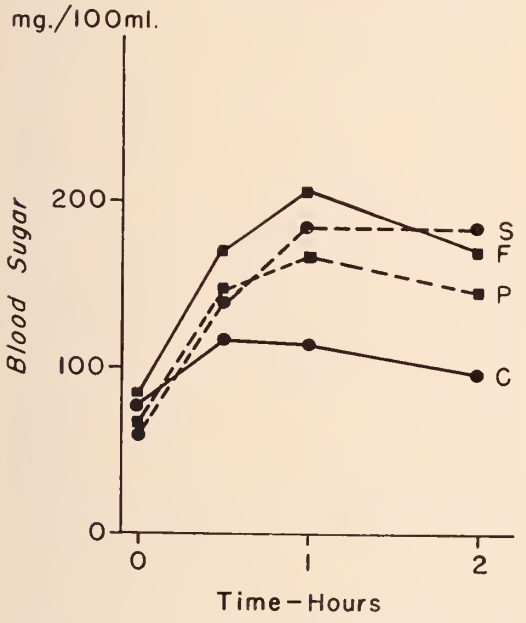


Figure 1. Composite curves showing the effect of diet on glucose tolerance of 4 groups of normal young adults. The groups were fed diets consisting of nothing but carbohydrate (c), protein (p), fat (f) or water (s), respectively, for two days prior to the glucose tolerance tests. Only the carbohydrate fed group had "normal" glucose tolerance (after Sweeney [5]).

glucose tolerance. The data are taken from a paper by Sweeney [5] and are derived from a study of 4 groups of normal young adults. The experimental diets were taken for only two days prior to the glucose tolerance tests. The groups were fed only carbohydrate, protein, fat or water, respectively. The curves, each of which is a composite, indicate impaired glucose tolerance in each group but the one fed carbohydrate. The clinical importance of these observations is obvious. The usual criteria of pathologic impairment of glucose tolerance are not applicable to an individual who has been eating abnormally just before a glucose tolerance test.

Figure 2 illustrates the effect of prior

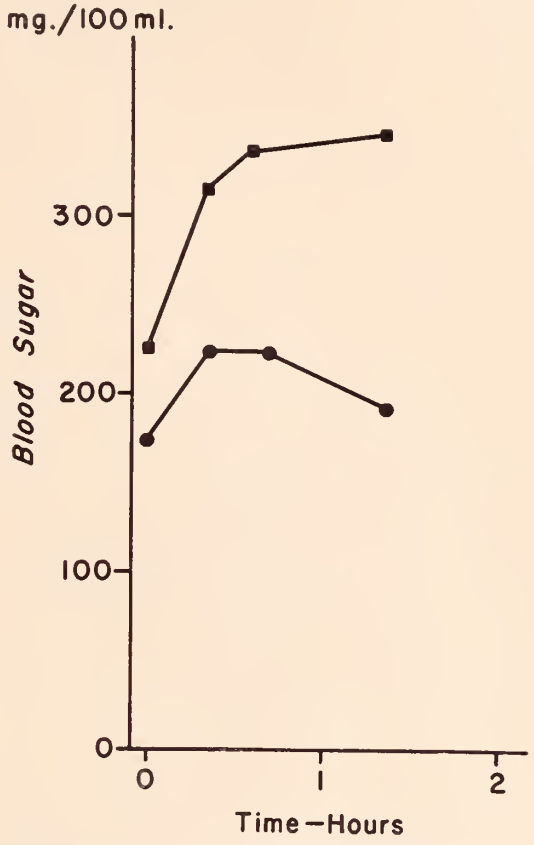


Figure 2. The effect of prior administration of massive doses of insulin on the glucose tolerance of chicks. The lower curve represents the glucose tolerance of a control group of animals and the upper curve, the glucose tolerance of the insulin treated animals (after Opdyke [6]).

administration of insulin on glucose tolerance. These data, obtained from a paper by Opdyke,[6] are presented here with hesitation. It is a well known endocrinologic principle that exogenous hormone depresses secretion of the corresponding endogenous hormone. For examples, cortisone depresses release of endogenous adrenal cortical hormone and desiccated thyroid gland depresses release of endogenous thyroid hormone. One would expect the same of insulin. Curiously, I have been unable to find data from experiments on human beings which support this expecta-

tion. The data depicted here are derived from experiments on chicks which were given massive amounts of insulin for three days prior to the test and give unequivocal evidence that the procedure used reduces glucose tolerance in these animals. These data together with the theoretic consideration I have already described and isolated clinical observations suggest to me that interpretation of a glucose tolerance curve in someone who has recently been taking insulin is a hazardous undertaking.

The foregoing may be considered examples of physiologic impairment of glucose tolerance. We come now to some pathologic causes of impaired glucose tolerance.

Diffuse hepatic disease is one. Leevy and associates [7] reported an impressive group of cases which illustrate how the disordered carbohydrate metabolism of hepatic disease may mimic that of diabetes. There were 10 alcoholic patients with hepatic disease, all of whom were hyperglycemic and all but 1, glycosuric. Treatment of the hepatic disease was accompanied by improvement in carbohydrate tolerance in all 10 patients. The most striking case was that of a patient whose initial fasting blood sugar concentration was 460 mg. per 100 ml. and whose urinary excretion of sugar amounted to 24 Gm. per twenty-four hours. After twelve weeks of therapy, which did not include the use of insulin, the fasting blood sugar concentration was 90 mg. per 100 ml. and the urine contained no sugar.

Diabetes itself may be responsible for hepatic damage, especially in the young. The differential diagnosis between diabetes with secondary hepatic damage and hepatic damage with secondary hyperglycemia may be difficult. It is noteworthy that none of Leevy's patients knew of diabetic relatives. Prolonged observation of the patient while he is being treated may be necessary for differentiation.

Idiopathic hemochromatosis is characteristically associated with hyperglycemia. The diagnosis of hemochromatosis, once it is suspected owing to the findings of hyperglycemia, hepatomegaly, and bronzing of the skin, may be confirmed by histologic examination of biopsied cutaneous and hepatic tissues stained to reveal hemosiderin and by measurement of the iron content of serum. Some hemochromatotic patients with reduced glucose tolerance resist the action of insulin remarkably. Root [8] reported the case of such a patient in whom death resulted from diabetic coma, which developed while he was receiving 1600 units of insulin daily. Davis and Arrowsmith [9] reported data suggesting that depletion of the patient's massive iron store by repeated blood letting may improve his glucose tolerance.

Functioning tumors of the islet cells are sometimes associated with glucose tolerance curves suggestive of mild diabetes. This paradoxical association of hyperinsulinism and impaired glucose tolerance has not been conclusively explained, though one may speculate that pathologic release of insulin from the tumor suppresses the physiologic responsiveness of normal islet tissue. Whipple and Bauman [10] reported glucose tolerance studies in 17 patients having islet cell tumors. Preoperatively, 8 had glucose tolerance curves which had some resemblance to diabetic curves. Figure 3 shows the pre-

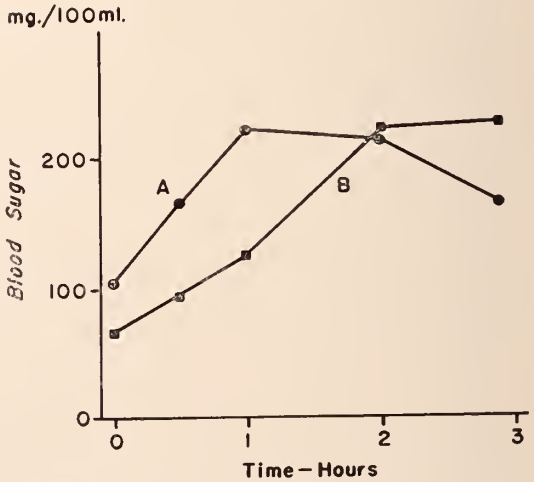


Figure 3. The preoperative glucose tolerance curves of two patients (A and B) having islet cell tumors. Both indicate impaired glucose tolerance. Attention is called to the peculiar configuration of curve B.

operative glucose tolerance curves of the 2 patients from whom islet cell tumors have been removed at the Ochsner Clinic. One curve is indistinguishable from curves seen in mild diabetes; the other has the singular configuration of beginning at a low level and rising progressively over the three hour period of the test. This configuration may be pathognomonic of islet cell tumor. Whipple and Bauman remarked on it in their report.

The diagnosis of islet cell tumor demands demonstration of spontaneous hypoglycemia occurring during a prolonged (up to seventy-two hours) fast and exclusion of other causes of spontaneous hypoglycemia, such as primary and secondary adrenal cortical insufficiency and severe hepatic disease. As we have just mentioned, the shape of the glucose tolerance curve may suggest the diagnosis.

After subtotal gastrectomy, glucose tolerance tests may yield abnormal results. After administration of the test dose of glucose the blood glucose may rise to high concentrations and glycosuria often occurs. Thereafter the blood sugar concentration rapidly drops and at about the second hour of the test hypoglycemic levels may be reached. Muir [11] found glucose tolerance curves with this configuration in 34 of 86 postgastrectomy patients. Glycosuria occurred during the test in each of the 34 patients. Figure 4 illustrates a postgastrectomy glucose tolerance curve. A diagnosis of diabetes mellitus had been made on this patient before the true condition was recognized.

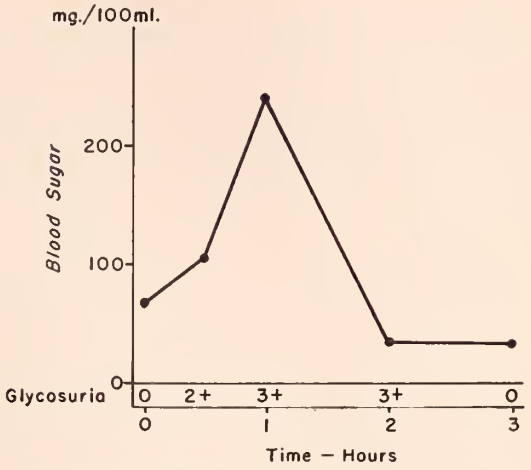


Figure 4. The glucose tolerance test of a patient who had had partial gastrectomy. Blood sugar values refer to "true" glucose. Attention is called to the hyperglycemia at one hour and the hypoglycemia at two and three hours. Renal glycosuria is also present.

TABLE 2
SOME CAUSES OF NORMOGLYCEMIC MELITURIA *

A. Renal glycosuria
   1. As an isolated finding
   2. During treatment with certain adrenal cortical hormones or ACTH
   3. During later months of pregnancy
   4. As part of Fanconi's syndrome
B. Melituria due to excretion of carbohydrates other than glucose
   1. Lactose
   2. Galactose
   3. Maltose
   4. Mannoheptalose
   5. Pentoses
   6. Fructose
   7. Sucrose **
C. Melituria due to excretion of substances other than carbohydrates
   1. Drugs; salicylates, camphor, menthol, chloral hydrate, morphine, pyramidon.
   2. Alkaptone (homogentisic acid)
      a. As an isolated finding
      b. As a manifestation of ochronosis

* The term "melituria", as here used, signifies the presence in urine of substances which give a positive reaction to Benedict's test or to the Clinitest procedure.
** Sucrose gives a positive reaction to Benedict's test or to the Clinitest procedure only after hydrolysis.

NORMOGLYCEMIC MELITURIA

Some causes of normoglycemic melituria are listed in Table 2. Renal glycosuria occurs not infrequently in the later months of pregnancy and lactosuria may be considered physiologic when occurring during the last few days of pregnancy and during lactation. Most of the other varieties of normoglycemic melituria are rare. I would have said all varieties (on the basis of my own experience) were it not for Lawrence's [4] remarkable statement: "Sixty-five per cent of 800 cases of glycosuria in army personnel investigated in London were proved to be [renal glycosuria]". Lawrence implied that this percentage may have been as high as it was because most of the patients with glycosuria were under thirty years of age.

The diagnosis of normoglycemic meli-

turia follows from the demonstration of melituria in a patient with a normal glucose tolerance curve. Figure 5 depicts data from such a patient. This patient had been treated briefly with insulin before the true diagnosis was established.

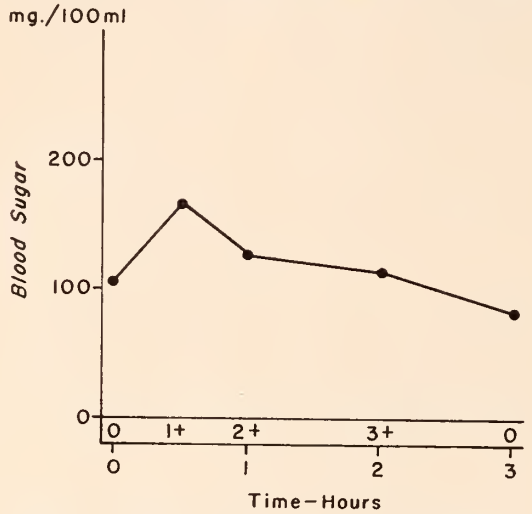


Figure 5. Renal glycosuria in the case of a man in whom a diagnosis of diabetes mellitus had been made. The reducing substance in the urine was identified as glucose.

Another patient, who came to the Ochsner Clinic with the diagnosis of renal glycosuria made elsewhere, related that he had seen a score of physicians because of glycosuria and had been kept miserable by insulin-induced hypoglycemic attacks before the diagnosis of renal glycosuria was established.

Normoglycemic melituria is usually a harmless anomaly signifying no serious disorder. The renal glycosuria of Fanconi's syndrome, the galactosuria of galactosemia and the alkaptonuria of ochronosis are exceptions. Nonetheless, although identification of the reducing substance in the urine can rarely be put to practical use, attempts at identification should be undertaken. Sometimes reasonable certainty may be gained from information in the history. The normoglycemic melituria of late pregnancy and lactation, of drug takers and of avocado eaters (mannoheptalosuria) can be identified by this means. For the rest, identification usually requires the services of a biochemical laboratory.

CONCLUSIONS

Nondiabetic impairment of glucose tolerance and melituria enter into the differential diagnosis of every case of suspected diabetes mellitus. For this reason, among others, every patient with abnormal carbohydrate metabolism deserves a painstaking general examination. Even after the diagnosis of diabetes has been made, the patient should be observed carefully and frequently for several months. This is especially important if the patient has no family history of diabetes. Anything unusual in the clinical manifestations of the disease requires renewed diagnostic efforts.

Great caution should be used in diagnosing diabetes mellitus if the patient is pregnant, obese, or suffering or convalescing from an infectious process, trauma including surgical operations, or hyperthyroidism. Glucose tolerance may return to normal after delivery or on return of normal health. Ideally, before the critical tests for the diagnosis of diabetes mellitus are made, the patient should have all significant correctable disorders eliminated and be well fed, active and free of the effects of drugs and exogenously administered hormones.

Severe reduction in carbohydrate tolerance can be firmly diagnosed by fasting blood sugar determinations. In less severe cases a glucose tolerance test should be done. For estimating blood sugar concentrations a technic which measures glucose concentration is preferable to one which measures total reducing substances.

The finding of melituria alone is not sufficient evidence for making the diagnosis of diabetes mellitus.

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CERTAIN INTERRELATIONSHIPS OF MEDICINE, INSURANCE AND THE LAW *

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The legal and medical professions have many things in common. In many respects they are as far apart as the North and South poles.

The lawyer takes an oath to support the Constitution of his state and of the United States. You no longer take the Hippocratic oath but I believe the pertinent portions thereof are contained in the Code of Ethics of the American and other medical societies to which you may belong.

Of the two professions, it is my feeling that you have the greater responsibility. On many occasions I have heard learned and distinguished lawyers discourse on and extol and praise the virtues of the legal profession. The point is frequently made that our profession ever espouses the cause of the poor and downtrodden and is the keeper of the liberties and the constitutional rights of our fellowmen. I subscribe to that wholeheartedly and am proud to be a member of such a profession. By and large its ideals are high and it does render a real service to humanity. It has its shysters just as the medical profession has its quacks but like the medical profession the vast majority of its members are imbued with high ideals and a proper concept of their duty to their God, to their fellowman, and to their country.

The lawyer deals with property rights and the freedom and liberty of man. However, these things fade into insignificance in comparison with life and death. True it is that life without the blessings of property rights and liberty may be burdensome and not worth-while. However, a life racked with pain and suffering and with a sense of impending doom is intolerable. Unto your hands is entrusted the welfare, the happiness of and life itself. One mistake on your part, such as a wrong diagnosis or slip or mishap or an error in judgment may, and often does, mean the difference between life and death. Yours is truly a great responsibility.

Through the carelessness or ignorance or inexperience of a lawyer a man may lose his worldly goods. However, if such happens there is ever present the chance and opportunity to start anew and rebuild his fortune. If, however, through your mistakes or ignorance or inexperience a man loses his health beyond repair he is lost irreparably and all the wealth in the world cannot restore the status quo.

So with due appreciation of and respect for my own profession and in no wise belittling it, I salute you gentlemen as members of a profession who, second perhaps to the ministry, are charged with the greatest responsibility that can be conferred upon or assumed by a mortal being.

As a preface to some of the matters on the agenda I would like to give you the legal definitions of a few matters. I realize this may be dry and perhaps boring but it is necessary for a proper understanding of some of the subjects to be discussed.

ACCIDENT AND ACCIDENTAL MEANS

Take the term "accident" for example. The most illiterate layman has a pretty good idea of what the term means. However, one finds many different definitions and interpretations of the word by the Appellate Courts.

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"Accidental means" is a phrase that presents itself for interpretation in numerous cases. Literally hundreds of decisions have been rendered in which reams have been written for the purpose of establishing either that it has a meaning differing materially from the word "accident" or that the phrase means the same thing as the word "accident".

This differentiation between the meaning of the word and the phrase resulted in Mr. Justice Cardoza of the United States Supreme Court observing that "The attempted distinction between accidental results and accidental means will plunge this branch of the law into a Serbonian Bog".[16] He reasoned thusly: "When a man has died in such a way that his death is spoken of as an accident, he has died because of an accident, and hence by accidental means".

However, there are many respectable high courts that refuse to follow that broad statement.

Accident may be defined as "an unlooked for mishap or an untoward event which is not expected or designed, an event happening at a special time or occasion".

In the case of accidental means some slip or mishap must have occurred in connection with the intentional act performed by the actor.

The leading case on the subject of accident and accidental means is what is known as the Barry Case decided by the United States Supreme Court in the year 1888.[17]

In that case the insured, a thirty year-old physician jumped from a platform to the ground beneath, about four feet downwards. Two companions preceded him in a similar jump and without sustaining injuries. Dr. Barry immediately experienced a distress in the stomach, vomiting, and passed nothing but decomposed blood and mucus for a period of nine days at the expiration of which time he died. There was conflicting testimony as to whether his death resulted from duodenitis or a stricture of the duodenum as alleged in the complaint. The policy provided for payment if the insured "shall have sustained bodily injuries effected through external, violent and accidental means, * * * within 90 days from happening thereof". The policy excluded liability if disease should contribute to the death and further provided that benefits would not be payable "except where the injury is the proximate or sole cause of the disability or death".

The distinction can best be explained by quoting from a part of the court's charge to the jury as follows:

> "And I instruct you that if Dr. Barry jumped from the platform and alighted on the ground in the way he intended to do, and nothing unforseen, unexpected, or involuntary occurred, changing or affecting the downward movement of his body as he expected or would naturally expect such a movement to be made, or causing him to strike the ground in any different way or position from that which he anticipated or would naturally anticipate, then any resulting injury was not effected through any accidental means. But if, in jumping or alighting on the ground, there occurred, from any cause, any unforseen or involuntary movement, turn or strain of the body which brought about the alleged injury, or if there occurred any unforseen circumstance which interfered with or changed such a downward movement as he expected to make, or as it would be natural to expect under such circumstances, and as caused him to alight on the ground in a different position or way from that which he intended or expected, and injury thereby resulted, then the injury would be attributable to accidental means.
>
> "Of course it is to be presumed that he expected to reach the ground safely and without injury. Now, to simplify the question and apply to its consideration a common-sense rule, Did anything, by chance or not as expected, happen, in the act of jumping or striking the ground, which caused an accident? This, I think, is the test by which you should be governed in determining whether the alleged injury, if any was sustained, was or was not effected through accidental means." [18]

On the subject of proximate cause, the instruction of the court was as follows:

> "Whether a cause is proximate or remote does not depend alone upon the closeness in the order of time in which certain things occur. An efficient, adequate cause being found, it must be deemed the true cause, unless some other cause not incidental to it, but independent of it, is shown to have intervened between it and the result. If, for example, the deceased

sustained injury to an internal organ, and that necessarily produced inflammation, and that produced a disordered condition of the injured part, whereby other organs of the body could not perform their natural and usual functions, and in consequence the injured person died, the death could be properly attributed to the original injury. In other words, if these results followed the injury as its necessary consequence, and would not have taken place had it not been for the injury, then I think the injury could be said to be the proximate or sole cause of death; but if an independent disease or disorder supervened upon the injury, if there was an injury—I mean a disease or derangement of the parts not necessarily produced by the injury—or if the alleged injury merely brought into activity a then existing, but dormant, disorder or disease, and the death of the deceased resulted wholly or in part from such disease, then it could not be said that the injury was the sole or proximate cause of death." [19]

The jury found in favor of the beneficiary and its verdict was affirmed by the Supreme Court.

This decision has been cited in hundreds of decisions by the State and Federal Courts. Oddly enough, it is cited by both those who contend that there is no distinction between "accident" and "accidental means" and those who contend for the opposite view. Those who cited in support of the first theory contend that nothing unusual happened in the jump from the platform; that the insured did the very thing he intended to do and that the result was unexpected and undesigned and that a recovery having been permitted in the case, the decision is an authority for the proposition that there is no distinction between the two terms. Those who cite the case as an authority for a distinction between the two terms stress the language used in the court's charge to the jury and contend that the jury is bound to have found that there was some slip or mishap, such as an unexpected twisting of the body in the descent from the platform to the ground and that, otherwise, under the charge of the court, the judgment would not have been affirmed.

I have discussed the case at length because of the fact that it is usually cited by the Appellate Courts in practically every case involving the subject of accident or accidental means.

A simple case with slightly different facts will serve to illustrate the difference between death as the result of accident and death from accidental means:

Your automobile stalls in the snow—or perhaps down here I should say on an unpaved muddy road. You get behind it and push it. As a result of the exertion you have a so-called heart attack and die. Your death is due to accident but not as the result of accidental means. You did the very thing you intended to do and in the very manner you intended. The result was unforeseen and undesigned but there was no slip or mishap.

Now, let us assume your car has a flat tire. You place the jack under the axle and proceed to pump. Suddenly the jack slips, the handle strikes your chest with powerful force which causes an aneurism and you die. The death is due to accidental means. The mishap was the accidental slipping of the jack and its contact with your body.

A Missouri Appellate Court explained it as follows:

"In Missouri, therefore, death which is merely the unexpected result of a wholly intentional act is not a death from accidental means. To constitute the means accidental in such a case, some causative mischance, slip or mishap must have occurred in connection with the intentional act." [20]

PRIVILEGED COMMUNICATIONS

The common law did not regard communications between attorney and client, physician and patient, and priest and confessor as being confidential and privileged.

By "common law" is meant that body of rules, regulations and precedents that sprang from common consent and understanding that Government and individuals should be guided and controlled in their actions and conduct in accordance with certain standards that were given general recognition by those charged with the duty of enforcing and preserving the liberty, freedom and property rights of citizens of a country. It is a heritage from England. It is often referred to as

the "unwritten law." The Privileged Communication Statute varies in different jurisdictions. It was introduced in the State of New York in 1828. Some 30 states and the District of Columbia now have statutes pertaining to the subject. They are lacking in uniformity but have the common purpose of protecting from disclosure, under legal compulsion, information given to a physician while treating a patient or information given to an attorney by his client in a professional capacity. It is a privilege for the benefit of the patient or the client. It may be waived by the patient either by express consent or impliedly by some act on his part that removes the bar. If he waives his rights the physician is no longer bound to observe the rule. If in a court proceeding the patient uses his physician as a witness to testify to some phase of his illness or treatment therefor then, generally speaking, the bar is removed and the opposition has the right to require a full disclosure from the physician. The physician cannot refuse to testify. The statute is not enacted for his benefit. When called upon to testify he must do so unless on timely objection interposed by the patient or his attorney and sustained by the court, it is ruled that he may not do so.

In some states the privilege is limited to civil causes. In some—Louisiana for example—it is limited to criminal cases. In others it is limited to a certain extent, as for example, in making the privileges inapplicable to prosecutions for homicide or bodily injury.

In some states the privilege applies only to information pertaining to social or loathsome diseases or information that would blacken or besmirch the reputation or character of the patient. In others it is limited only to such information as is given to the physician which is necessary for proper diagnosis and treatment and does not extend to other information given nor to what is seen or observed by the physician. Information obtained by the physician outside of his professional capacity is not privileged. Neither is information privileged that is acquired by the physician after the relation of physician and patient has terminated nor information acquired by the physician before the relationship arose.

AUTOPSIES

As to the matter of autopsies, you gentlemen doubtless are conversant with the pertinent laws of your particular state. Quite naturally, when an autopsy is performed at the instigation of some branch of government, municipal or state, for the purpose of determining whether death was due to violent or natural causes, you are protected from any claim of mutilation. In other cases, I am sure you require written authorization from the proper relatives. Failure to do so would subject you to the hazards of a suit for damages. Even charitable hospitals have been held liable where an autopsy was performed without such consent. There was in effect a state statute exempting the hospital from claims for damages on the part of charity patients. However, the plaintiff in the case was not a patient. The action was one for damages for mutilation, the plaintiff being a surviving relative of the deceased. Therefore, the state's exemption statute was inapplicable.

Also, one who unlawfully induces another to perform an unauthorized autopsy is liable for damages. In a Texas case an agent of an insurance company, anticipating that surviving relatives might attempt to collect the proceeds of a policy on the theory of accident, induced a justice of the peace, who performs the duties of coroner, to authorize the county physician to perform an autopsy. The insurance company paid the fee of the physician who performed the autopsy. In the litigation it was held that although the autopsy was ordered by the coroner, it was illegal since it was not a violent death but one from natural causes. A fairly substantial judgment was awarded the plaintiff against the insurance company.

In the case of a deceased child, authorization for an autopsy should be ob-

tained from both parents if they are both alive and are living together or can be contacted.

While a coroner has a right to conduct or order an autopsy in cases of violent or suspicious deaths, yet he has no right to act arbitrarily. He is called upon to exercise his own good judgment. When the advisability of an autopsy seems plausible and he acts in good faith, he is protected. However, in a situation such as the Texas case mentioned, he could be held accountable, although in that case the widow took it out on the insurance company alone.

In an Indiana case there was a squabble between two physicians who treated a child at different times, the difference of opinion being as to what caused death. Death was from natural cause, to wit, diphtheria of the larynx, a disease which is said to be difficult of diagnosis. In order to settle the matter they induced the coroner to order an autopsy. The state statute provided for the payment of fees to one conducting an autopsy upon order of the coroner. It was held that "one holding an autopsy under the direction of the coroner was charged with notice of the limitations on the statutory power of the coroner to hold inquests and autopsies, and the county is not estopped from contesting the validity of a physician's claim for an autopsy merely because it was directed by the coroner." By the same token a surviving relative could make the same challenge in a tort action for an unauthorized mutilation of the dead.

Most of the litigation pertaining to unauthorized autopsies has arisen in cases where the physician was suing to recover his fees. However, there are quite a number of reported cases where the action was one in tort for the unauthorized mutilation of a dead body.

What about the applicability of privileged communication statutes as they might pertain to autopsies? You conduct an autopsy; a litigant obtains a copy of your report or if you are in possession of a copy you are served with a subpoena duces tecum, which you must obey, and are placed on the stand and interrogated about the report. Can you refuse to testify on the grounds of privileged communication? Obviously not, because there can be no such thing as a privileged communication or confidential relation between a physician and a dead man. Of course, if you were his physician during his lifetime and are called upon to testify as to facts learned by you by reason of the relationship of physician and patient, such facts could be excluded on proper and timely objection.

In passing on the subject, one of the United States Circuit Court of Appeals said:

> "A deceased body is not a patient. The relation of physician and patient ends when the death of the patient ensues. To hold that facts discovered through an autopsy are privileged communications within the meaning of the statute will not effectuate what we conceive to be its manifest purpose, namely, to obtain full disclosure to the physician in order to enable him to properly treat the patient. Treatment cannot avail after death. On the other hand, to hold that facts obtained by a physician through an autopsy are not privileged communications will not, in our opinion, in any wise prevent the accomplishment of the purpose for which the statute was enacted. The foregoing must be true, unless it can be said that a sick person will be deterred from calling a physician because of fear that, if death ensues, such physician will probably perform an autopsy and disclose the facts obtained through such autopsy. We think it altogether unlikely that such a fear would deter a sick person from securing the services of a physician. As a matter of fact, an autopsy is much less likely to follow in cases where the deceased person has had the services of a physician during his last illness." (Travelers' Insurance Company versus Bergeron 25 F (2d) 680)

SUICIDES

I would like to touch lightly on the subject of suicide. Practically all life insurance policies relieve the insurer of liability except for the return of premiums if the insured dies of self-destruction, whether sane or insane, if within two years of the issuance or date of the policy. Double indemnity contracts and accident policies contain similar provisions, but without any time limit.

The law reports are replete with decisions involving this difficult problem. In many of the cases, any reasonable minded man except a juror impaneled to decide a case between a beneficiary and a reputedly wealthy insurance company would know without doubt that the decedent took his own life. Many individuals who commit suicide resort to various and devious methods to make their death appear accidental. Some of the favorite methods are from shootings, poisoning, overdoses of sleeping potions, drownings, driving an automobile in front of or into the side of a speeding train at railroad crossings, etc.

Frequently laymen, and occasionally courts, criticize the so-called "fine print" policies, saying the insurer prepares one page consisting of bold faced type promising payment and then four or five pages of fine print taking away from the promise to pay. Many of the exceptions or exclusions have been adopted because of adverse results in questionable cases. To use a simple and frequent case: An individual is found dead in a closed garage, a victim of carbon monoxide. The engine of his automobile is running or has run until the gasoline became exhausted. The hood of the car has been raised and tools are scattered about. The appearances are that he was working on his car and was overcome accidentally. The investigation may show that the decedent had been in poor health and despondent; that he had been having domestic and financial difficulties or that he was an embezzler or had committed some other crime and that he had been heard to threaten suicide a few weeks, a few months, or a few years prior to his death. There are so many motives that the coroner returns a verdict of suicide; however, there is a legal presumption against suicide and the coroner's verdict, if admissible at all, is not conclusive. Almost invariably, twelve good men and true in the jury box will find his death was an accident, particularly if the beneficiary happens to be an attractive widow or has with her in the court room exhibits consisting of one or more small children who have been bereft of a father.

On account of the predilection of juries to render verdicts adverse to the insurer in such cases, quite a number of insurers exempt the company from liability in double indemnity and accident policies where death is the result of asphyxiation from, or the inhalation of, gas, either voluntary or otherwise.

A startling number of deaths occur from overdoses of the so-called sleeping pills. The insurance contract may, and frequently does, exempt the company from liability from death resulting from poisoning as well as from suicide. When do such pills cease to be medicine, or if you please, sedatives, and become "poison," if ever? In a number of adjudicated cases, the insurance companies have been cast because they were unable to prove that the insured took the overdose with the intent of self-destruction or was conscious of the fact that he or she was taking a lethal dose, although the autopsy and laboratory report may show the amount taken sufficient to kill several people. As a result of this situation, it has become necessary to add another exclusion in such contracts so as to exempt the companies from liability where death is caused directly or indirectly from poisons or barbiturates, whether taken intentionally or otherwise.

Regardless of the exempting clauses, most of the reputable companies will waive the clause and make payment when convinced the death of the insured was purely from accidental means.

There are so many cunning ways in which one can commit suicide and make it appear accidental that the insurer cannot be blamed for adopting such legitimate safeguards as are available. Excessive losses from such sources lead to the payment of higher premiums by other policy holders who are content to let the Great Redeemer decide when the roll should be called.

CAN AN EXPERT WITNESS BE COMPELLED TO GIVE HIS PROFESSIONAL OPINION WITHOUT COMPENSATION OTHER THAN THE ORDINARY WITNESS FEE?

I wonder how one of you would feel should you be compelled to attend court as a witness and give your opinion as an expert witness and then be informed that for your day's work you would receive the munificent sum of One Dollar plus an allowance of Five Cents per mile each from your office or home to the court house. It could happen!

It could not happen in the State of Louisiana because the matter is covered by statute as follows:

> "Witness called to testify in court only to an opinion founded on a special study or experience in any branch of science, or to make scientific or professional examinations, and to state the results thereof, shall receive additional compensation, to be fixed by the court, with reference to the value of the time employed and the degree of learning or skill required." [1]

In several cases, fees of $25 per day have been allowed expert witnesses by Louisiana trial courts, the fees being charged as a part of the costs of court and paid by the losing party.

The Louisiana Code also protects physicians living more than ten miles from the seat of justice by providing that they shall not be compelled to attend court as witnesses in civil cases "whenever in their opinion the life of any of their patients might be endangered by their attendance upon the court".[2] Instead their depositions may be taken.

The provision for additional compensation was enacted in 1884. I suspect that Louisiana has had a very active and progressive State Medical Association.

Speaking generally, no one can be compelled to render services for another without compensation. A possible exception exists in some states where the trial court may and does appoint an attorney to represent an accused in a criminal case when the defendant is unable to employ counsel.

In the year 1877, a criminal case was being tried in Fort Wayne, Indiana. The accused was being tried for rape. He called as a witness one, Dr. A. A. Buchman. During the course of the examination the doctor was asked a question that called for an expression of his professional opinion. He thereupon stated:

> "The answer that I would have to give would depend upon my professional knowledge of the subject, and I respectfully refuse to give my professional opinion without being compensated."

The Court:

> "To whom do you look for your pay?"

Answer:

> "I expect the party calling me shall compensate me or that the court shall provide some means of compensation."

The court looked at the accused and his attorney, but their pocketbooks were closed and the silence was appalling. After due deliberation, the court ruled the witness would be required to answer the question without compensation other than the ordinary witness fee. The witness persisted in his refusal to answer, whereupon he was ordered to jail for contempt.

The record fails to show whether the good doctor was Irish but indicates that he was a scrapper. He appealed the case all the way to the Supreme Court of Indiana from which court he emerged triumphant.

In reversing the trial court and ordering the witness released and discharged from further prosecution, the Supreme Court said:

> "If physicians or surgeons can be compelled to render professional services, by giving their opinions on the trial of criminal causes, without compensation, then an eminent physician or surgeon may be compelled to go to any part of the State, at any and all times, to render such service, without other compensation than such as he may recover, as ordinary witness fees, from the defendant in the prosecution, depending upon his conviction and ability to pay. This, under the general principles of law and the constitution of the State, he can not be compelled to do. If he knows facts pertinent to the case to be tried, he must attend and testify as any other witness. In respect to facts within his knowledge, his qualifications as a physician or surgeon are entirely unimportant. In respect to facts, as before stated, he stands upon an equality with all other witnesses, and the law, as well as his duty to the public, requires him to attend and testify for such fees as the legislature has provided. Not

so, however, in respect to his professional opinions. In giving them, he is performing a "particular" service, which can not be demanded of him without compensation." [3]

Section 21 of the Bill of Rights of the Indiana Constitution provides that "no man's particular services shall be demanded without just compensation". The Supreme Court relied on that provision in ruling for the witness.

In a companion case involving the same situation and decided in the same year, one, Dr. Dills made the following speech to the court:

"I did not offer my services here, any more than I do my professional services elsewhere. I was sent for and have come. My time and my skill are my capital, and I can not surrender them gratuitously to any but the poor, since it is by my professional opinion that I earn my living. There is a distinction between a man who sees a fact and is called to prove it in a court of justice, and that of a man who is selected to give his opinion on a matter with which he is peculiarly conversant, from the nature of his employment in life. The former is bound, as a matter of public duty, to speak to a fact which happens to have fallen within his knowledge. Without such testimony, the course of justice would be stopped. The latter is under no such obligation. For the above-named reasons, I respectfully decline to give the opinion of an expert in the case now pending, except upon the payment of my fee in advance." [4]

I would say the witness was well-briefed by his attorney. He also was committed for contempt but was released by the Supreme Court.

So far as I have been able to ascertain, those decisions stand as the law of Indiana today.

Turning a bit to the Northeast, we find a similar holding in a Pennsylvania court where the litigation was between private individuals in a civil case. A certain institution owned some land that the City of Philadelphia sought to condemn. The owner of the land employed some realtors to appraise the land. Their appraisal being about the same as that of the City, the institution neither paid them for their services nor called them to testify. The City subpoenaed the witnesses, placed them on the stand and sought to force them to testify as to their appraisals. Among other things, they refused to testify as experts because their fees had not been paid. In upholding them the Pennsylvania Supreme Court said:

"The process of the courts may always be invoked to require witnesses to appear and testify to any facts within their knowledge; but no private litigant has a right to ask them to go beyond that. The state or the United States may call upon her citizens to testify as experts in matters affecting the common weal, but that is because of the duty which the citizen owes to his government, and is an exercise of its sovereign power. So also where the state or the United States, in her sovereign capacity, charges the citizen with crime, she may, if need be, lend her power in that regard to the accused; for she is vitally interested, as such sovereign, that public justice shall be vindicated within her borders. Perhaps, also, under like circumstances, she may also lend her power in civil cases. But the private litigant has no more right to compel a citizen to give up the product of his brain than he has to compel the giving up of material things. In each case it is a matter of bargain, which, as ever, it takes two to make, and to make unconstrained." [5]

It will be noted the decision protects expert witnesses in litigation of a civil nature between private parties and that the rule would not apply in criminal cases or in civil cases involving the State or the Federal Government.

So far the experts have batted 1,000 percent. Perhaps in listening to the pronouncements of these courts, you gentlemen have been exclaiming to yourself, "A Daniel come to judgment". Now let us turn to the other side of the picture. Decisions to the contrary have been rendered in Alabama,[6] Arkansas,[7] California,[8] Colorado,[9] Georgia,[10] Illinois,[11] Minnesota,[12] Missouri,[13] and Ohio.[14]

Perhaps the same rule prevails in several other jurisdictions. Most of the cases involved criminal proceedings but some of them involved civil suits between private litigants.

With the exception of Louisiana and Indiana, it is now fairly well settled that in *criminal cases* if a physician is called as a witness and during the course of his examination is asked the question that

calls for his professional opinion, he may not refuse to answer on the ground that he has not received a fee as an expert witness. In Louisiana he could be compelled to testify as the court is authorized to allow an extra fee even though no prior arrangement or agreement has been made. In the other jurisdictions, if he refuses to testify he may be punished for contempt of court either by fine or jail sentence or both, but usually a jail sentence of short duration is imposed.

The decisions are in accord that a court cannot force a physician to examine a patient or a dead body or to perform an operation or an autopsy for the purpose of preparing himself as a witness, without extra compensation, but it can make him testify as to facts known by him and also to express his professional opinion when called upon to do so, except in Louisiana and Indiana.

In an Illinois case the City of Springfield was sued for damages by a woman who sustained injuries because of a defective sidewalk. The City sued a physician who had not treated the plaintiff. A hypothetical question was propounded that called for the expression of an opinion as to whether or not the alleged injuries were the probable result of a fall. The trial occurred in 1897. The doctor must have been a friend of Dr. Buchman of Indiana or perhaps he had read the decision of the Indiana Supreme Court. At any rate, he proceeded to make a nice speech to the court about his rights and stated he would not give his opinion unless he should be paid a fee of $10. Upon his persistent refusal to answering the question he was held in contempt of court and fined $25. Upon appeal the judgment of conviction was affirmed by the Supreme Court of Illinois. It was held that the legislature fixed witness fees at $1 per day for each day's attendance and 5¢ per mile each way for necessary travel, and it being the duty of a good citizen to aid the court in administering justice, the good doctor was wrong in his refusal and would have to suffer the consequences. It was stated that the statutes are applicable to the high and the low and that no distinction should be made between experts and others; that the time lost in attending court means as much to the commonest laborer as that of the most skillful and highly-educated and trained expert. In the course of its opinion, the court made the following interesting observation:

> "If the precedent is once established that expert witnesses must be paid a reasonable compensation for their testimony, then it will not be long before such testimony will be offered to the highest bidder. The temptation will be to give opinions in favor of that party to the suit who will pay the highest price. The testimony of expert witnesses will thus become partisan and one-sided. The theory upon which such witnesses are required to testify in cases like this is that they are amici curiae, and that, testifying under the sanction of an oath, they do so, not with intent to take the part of either contestant in the suit but with a view to arriving at the truth of the matter, and for the purpose of aiding the court to pronounce a correct judgment." [15]

Finally, the most recent case on the subject was decided by the California Supreme Court in 1951 wherein it was held that a physician who has acquired knowledge of a patient or of special facts in connection with a patient may be called upon to testify with relation thereto without payment of more than the ordinary witness fee although the testimony is based on knowledge and opinions that are the result of his special learning.*

Notwithstandnig the law on the subject, I feel certain you gentlemen will not be called upon in many cases to testify as expert witnesses without adequate compensation. The legal profession is fully conscious of your years of preparation and of the vast sums expended for your education and training and that you are entitled to just compensation for your services. I can see some logic for the position of the courts in the administration of justice in the prosecution of criminals and also situations where the State or

* City and County of San Francisco v. Superior Court, etc. 231 Pacific 2d 26, 25 A.L.R. (2d) 1418, decided in 1951.

Federal Government is involved in a civil proceedings. It does seem to me, however, that to require the service of experts in civil litigation between private individuals is unjust and should not be tolerated.

If, perchance, the privilege is too much abused as to any of you in your jurisdictions, I am sure that a cordial invitation would be extended you to come to Indiana or Louisiana where you can enjoy the blessings, shelter and the protection of their Constitution and Statutes.

In closing, gentlemen, may I sound a note of warning concerning something in which all of us should be interested. Something which is of vital interest to your profession and the business in which I am presently engaged. Something that should be of interest to every citizen throughout the nation who still entertains what may be called the old-fashioned belief in private enterprise—the doctrine on which this country was founded and under which it has grown to be the richest and most powerful nation in the world.

Of course, I refer to creeping socialism in our government and the efforts of politicians, be they Republicans, Democrats, socialists, mugwumps, to put the Government in every phase of business and displace private enterprise.

It is an insidious growth, inch by inch, step by step, nurtured by honeycombed appeals to labor, to the aged, the indigent, the indolent and the gullible that is spreading like creeping cancer and striking at our very vitals. Unfortunately, there are smart men, great men and men of tremendous influence who for one reason or another feel that more and more we should turn to and depend upon the Government at Washington to solve problems that are and should be the business of the states and of the local communities in which we live.

Socialized insurance today can lead to socialized medicine tomorrow and vice versa. Nationalization of our great railroads, public utilities, air lines and steamship companies, industries, agriculture and labor itself are also potential victims. Once the dam is cracked, it's difficult to stem the torrent. Eventually the Government would have a hand in every business of every nature. The schemes sound plausible and reasonable in the beginning. It is proposed, in effect, that the states or private industry perform certain services for the people but with the aid of the Federal Government. Naturally, such aid calls for certain restrictions on the part of the Federal Government so that the state or private industry rendering the services is not a free agent. This is but the first step in the direction of the Government eventually assuming full control of such operations. From an economical standpoint, the same services can be rendered by the state or private industry with much less cost to the taxpayer.

I am sure we all feel that in the light of this progressive world we can no longer prescribe to a strict doctrine *laissez faire* but have to think where the Federal Government should lend a helping hand. Due restraint should be exercised lest the helper become the sole performer.

The time has come when those who want to preserve the form of government that has made us the freest people and the richest nation in the world must stand up and be counted and make our voices heard. Let our representatives in Washington know how we feel and persuade others to do likewise. Eternal vigilance, alertness and effort are the watchwords of freedom and liberty.

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A NEW DIAGNOSTIC AND SURGICAL PROBLEM, INFLAMMATORY FIBROID POLYPS OF THE STOMACH *

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Solitary polyps of the pyloric antrum are a diagnostic, therapeutic, and prognostic problem to clinicians, roentgenologists, gastroscopists, and pathologists. They may be classified according to their histology (Table 1):

TABLE 1
SOLITARY POLYPS OF THE STOMACH

A. Adenomatous	
1. Benign	
2. Malignant	
B. Nonadenomatous	
1. Neoplastic	
2. Inflammatory	
3. Miscellaneous	

In 1952 Dr. Elson B. Helwig and this author [5, 6] reported 10 new cases of a distinctive nonadenomatous polyp that in the past had masqueraded under such diverse terms as eosinophilic granuloma of the stomach,[1] gastric submucosal granuloma with eosinophilic infiltration,[14] neurofibroma,[4] atypical schwannoma,[9] hemangioendothelioma,[11] hemangiopericytoma,[12, 13] polypoid fibroma [3, 8] and fibrinous polyp.[10] Despite the variation in terminology, the basic gross and microscopic features were so strikingly similar that after special study the sole designation, "inflammatory fibroid polyp" was considered by the authors as most descriptive until a name could be established on the basis of the exact etiology.

The clinical and pathological features of this polyp are reviewed and an additional case is reported as an example of the correct approach to the problem.

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CLINICAL FEATURES

In the 10 cases studied by Helwig and Ranier,[5, 6] the age of the patient varied from 22 to 90 years with the majority being over 47 years. Epigastric pain unrelated to food intake was the most common symptom and was described as "gnawing", "aching" or "cramp-like". Nausea and vomiting occasionally accompanied intermittent colicky type of pain that suggested a ball-valve action of the polyp. Free hydrochloric acid was either absent or low in those cases in which gastric analysis was performed. In two of the cases pernicious anemia was diagnosed while in one case the anemia was unexplained. Eight of the 10 cases examined roentgenologically had a gastric lesion. In 6 cases it was interpreted as a polyp and in 2 as a possible carcinoma. Seven of the polyps were removed surgically; 4 by subtotal gastrectomy and 3 by local excision.

PATHOLOGY

In the 9 cases in which the site of the polyp was mentioned, the pyloric antrum was specified. In each of the cases the polyp was single. Although most of the polyps were sessile, a few were pedunculated and their diameter ranged from 1 to 2.5 cms. except for one polyp with a diameter of 5 cms. The submucosa was the principal site of origin of the lesions. Folds of mucosa radiated from the base of some of the polyps. Mucosa from the contiguous gastric wall covered the polyps except in the 7 cases in which an erosive type of ulceration was present at the apex. At operation the polyps were soft to rubbery and on their cut surfaces were pink-white and glistening.

Microscopically, all of the polyps were characterized by the presence of fibroblastic, reticular and fibrillar connective tissue, blood vessels of varying size and mural thickness and infiltrations of inflammatory cells in various proportions with a predominance of eosinophilic leucocytes. The description conforms with that detailed by a number of authors for a gastric lesion that they have given a variety

of names, such as listed in the introduction.

PATHOGENESIS

The variety of names originally given to this polyp and the resulting confusion in the literature stem from the various interpretations of the pathogenesis of this lesion. The neurogenous, vascular, allergic, and neoplastic theories are untenable in view of a comprehensive detailed study of the histologic features with the aid of special stains.[5, 6] Although an infectious agent is suspected on the basis of the natural history and pathologic changes, no specific agent has been identified to date. The gross resemblance of the polyp to granuloma pyogenicum of the skin [7] suggests that this lesion may represent the glandular counterpart of the same process. Although it is recognized that the adenomatous polyp is associated with pernicious anemia no mention of the association of inflammatory fibroid polyp with pernicious anemia is made in the literature.[2] The inflammatory fibroid polyp must be differentiated from the adenomatous polyp that has a premalignant connotation and dictates a different surgical approach.

There is no doubt that the polyp once established is enlarged due to peristalsis. The peculiar arrangement of the reticular and connective tissue in some of the polyps can be explained by a proliferative reaction on the part of specialized connective tissue in the submucosa that permits peristalsis.

CASE REPORT

(Case of Drs. Ben Goldsmith and J. R. Romero, Lake Charles, La.) A 56 year old white farmer was admitted to St. Patrick's Hospital on September 20, 1954, with the chief complaint of "dull aching" epigastric pain of three years' duration sometimes radiating over the entire abdomen but unrelated to food intake. The pain became more constant and severe during the six weeks prior to admission.

Past History: No pertinent information was obtained.

Physical Examination: No abnormalities were noted.

Laboratory and X-ray Findings: Hematocrit: 46%; Hemoglobin 15.1 gms./100 ml.; Leucocyte count 6,000/cu.mm.; Differential: Neutrophiles 60%; Lymphocytes 38%; Eosinophiles 2%. Urinalysis negative. Kahn negative.

Gastric Study: The stomach was high transverse type with slight cascading. Peristalsis was normal with waves beginning in the middle third of the stomach and extending through to the pylorus. A polypoid type of radiolucency was present in the antral region measuring about 1.5 by 1 cm. (Fig. 1). The polyp appeared



Figure 1. Roentgenogram showing polyp of pyloric antrum.

broad-based and was only slightly moveable. No other abnormalities were detected. Pylorospasm was not present. The remainder of the mucosal folds in the same region were normal. (Dr. Lesley Warshaw).

Hospital Course: Following a conference with the radiologist and pathologist, the surgeon decided that the best course of action was to open the stomach and remove the polyp with a cuff of normal mucosa at the base and examine the polyp by frozen sections. A clamp was placed across normal mucosa at the base and the sessile polyp was removed from its site, 3 cms. from the pylorus on the posterior wall of the antral portion of the stomach. Frozen sections were reported as inflammatory fibroid polyp. The mucosa at the site of excision was sutured and the stomach was closed.

Grossly, the sessile polyp possessed a dark red smooth and velvety surface that suggested erosion. The rounded summit was partially covered by a grey-white (Fig. 2) membrane. The polyp measured 0.9 cms. in diameter and projected 1.4 cms. above the normal mucosa. The cut surfaces were pink-white, glistening and moderately firm in the center with increasing softness toward the periphery.

Microscopically, the mucosa at the lateral margins became gradually attenuated until it was replaced by granulation tissue partially covered by a fibrinopurulent exudate. (Fig.3) The muscularis mucosae became gradually split and frayed from the lateral margins to the center. The core of the polyp was composed of small capillaries surrounded by fibrillar connec-



Figure 2. Solitary sessile polyp with eroded apex covered with membrane.



Figure 3. Hemisection of sessile polyp in Fig. 2. Note erosion of surface and granulation tissue reaction. H. and E., X5.

tive tissue arranged in concentric rings and parallel (Fig.4) bundles. A myriad of eosinophilic leucocytes and fewer lymphocytes infiltrated the connective tissue core that took the stain for collagen with Masson's stain. An occasional gland was isolated from the surface mucosa by the proliferative process.

The postoperative course was uneventful and the patient was discharged on October 2, 1954. On his last visit, April 25, 1955, seven months since the operation, there was no recurrence of pain.

DISCUSSION

Examination of frozen sections established the inflammatory nature of the polyp and eliminated the necessity of performing the much more serious operation of subtotal gastrectomy.

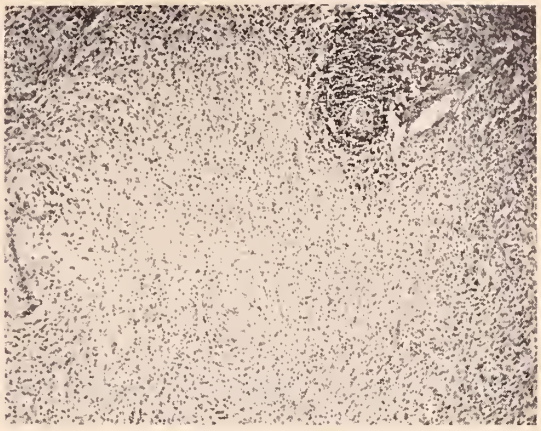


Figure 4. Concentric arrangement of fibrillar connective tissue about blood vessel (lower left); parallel fibers elsewhere. Note the myriad of eosinophilic leucocytes. H. and E. X75.

It is evident from the above histologic description that the term, inflammatory fibroid polyp, best describes a benign growth arising from mucous membrane (polyp), possessing a fibrous character and resembling a fibroma (fibroid), and lastly bearing a pronounced inflammatory nature.

SUMMARY

The clinicopathologic features of inflammatory fibroid polyps of the stomach as described by Helwig and Ranier are reviewed.

An additional case is reported as an example of the proper management of solitary polyps of the stomach.

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DISCUSSION

Dr. Lesley M. Warshaw (Lake Charles): Radiological and surgical explorations are primary in establishing the presence of the inflammatory fibroid gastric polyp; however, frozen section examination of the specimen must be performed to eliminate the more common adenomatous and malignant polyps. Gastroscopy, when available, would be of value. Accurate diagnosis is the result of combined efforts.

From the radiologists viewpoint careful detailed examination of the stomach is necessary, utilizing both routine and specialized techniques. Fluoroscopic, spot films, and radiographic visualization of the stomach are absolutely essential. The use of the protected palpating hand to "iron out" and carefully examine the mucosal folds is imperative in every case. In practically every patient the antrum of the stomach can be palpated Mucosal studies utilizing thick barium or one of the special preparations such as Rugar, in a fasting patient, will demonstrate polypoid radiolucencies of surprisingly small size.

Further observation during the examination should be made with the stomach partially and then fully filled with barium. The antrum can be filled with gas to obtain a contrast appearance similar to techniques used in barium contrast studies of the colon. Usually, this is easily performed by placing the patient in the left posterior oblique position so that the gas previously trapped in the fundus changes place through gravitation with barium and collects in the antrum and duodenal cap. This outlines the mucosal folds and contours nicely. Effervescent powders or carbonated beverages are of some help when properly used.

One word of warning—A gas bubble can simulate a polyp—however, by adequate examination as above described the differentiation is simple.

Once the organic lesion is visualized an attempt must be made by the radiologist to determine not only its location and size but, of much more importance, whether or not there are any signs of involvement of the stomach wall itself. This is the salient point in the gross differential diagnosis between benign and malignant polypoid diseases. To establish this the radiologist must carefully note the nature of the peristaltic waves, gastric wall flexibility and mobility in the area of the base of the polypoid lesion. It is also of some importance to attempt to determine whether the base is broad or pedunculated and this can be done by watching its movements in relation to the point of attachment. Pedunculated polyps are more likely to be benign but if malignant should certainly offer a better prognosis than the broad-based sessile types.

As brought out by Dr. Ranier, this lesion has been confined to the antrum of the stomach in all reported cases to date. Needless to state, any polypoid lesion arising in the antrum and apparently not causing stiffening or infiltration of the gastric wall should awaken interest as a possible inflammatory fibroid polyp. Such combined recognition can save the patient a gastric resection.

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THE SURGICAL MANAGEMENT OF TIETZE'S SYNDROME

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Tietze's [3, 4, 6] syndrome is characterized by a painful, nonsuppurative enlargement of a costal cartilage. The condition is benign in character and of undetermined etiology. Many methods of treatment have been reported: deep x-ray therapy, nitrogen mustard [5] local infiltration with procaine,[7] corrective postural exercises and bed boards,[2] and surgical removal of the involved cartilage.[1]

This report encompasses 4 cases of Tietze's syndrome treated by resection of the offending costal cartilage.

CASE REPORTS

Case No. 1.—V. A., a twenty-three year old white female, was first seen May 29, 1950. She complained of a painful swelling on her right chest wall. Physical examination revealed a localized tender enlargement of the second right costal cartilage at the chondrosternal junction. X-rays of this area were negative. Excision of the involved cartilage was performed under pentothal anesthesia and the specimen was reported as chondroma. The patient made an uneventful recovery and has had no further discomfort.

Case No. 2.—A. F., a thirty-four year old white female, was seen March 4, 1952, and found to have a tender mass in the right fourth costochondral area of unknown duration. In addition she had a well defined mass in the upper outer quadrant of the left breast. At the time of excision of the breast mass (proven benign), the involved cartilage was resected. The specimen was reported as normal cartilage. The patient has reported for regular check-ups and has remained free from symptoms referable to the chest wall.

Case No. 3.—E. C., a thirty-four old white

female, presented herself for treatment, July 9, 1953, with a painful mass in the left third costochondral area of one year's duration. The entire left third costal cartilage was resected and the specimen was reported as chondroma. The patient's postoperative course was uneventful and there has been no recurrence of symptoms.

Case No. 4.—P. S., a forty-one year old white female was seen December 29, 1954, because of vaginal spotting and a tender mass at the second left costochondral junction. A subtotal hysterectomy had been done elsewhere in 1950. She was admitted to the hospital where the cervical stump was removed and the second left costal cartilage resected. The specimen was reported as cartilage with proliferation under the perichondrium. Recovery was uneventful with relief of chest pain.

COMMENT

In all 4 of our patients, x-rays were negative, there was no history of trauma, and symptomatic relief followed surgical excision of the offending cartilage. In each patient, the prominent symptom was pain of long duration aggravated by local pressure and not relieved by rest. Common to all 4 cases was the presence of a visible palpable mass. In each of our 4 cases the entire costal cartilage, including the chondrosternal articulation, was excised. The recent occurrence of a chondrosarcoma of the costal cartilage in one of our patients (not included in this report) impressed upon us the importance of surgical excision to exclude a malignant lesion.

We therefore believe that the surgical approach to Tietze's syndrome is the treatment of choice because of the positive identification of the mass, the simplicity of surgical excision, and postoperative symptomatic relief.

SUMMARY

Four patients with Tietze's syndrome have been presented. Each patient was treated by resection of the entire costal cartilage including the chondrosternal articulation. An apparent cure was obtained in each instance.

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"XANTHOMAS" OF TENDON SHEATHS *

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Three concepts for the pathogenesis of xanthomatous lesions of tendon sheaths have been reported. From an analysis of 274 lesions reported in the literature and 70 cases of their own Galloway and associates [1] concluded that the lesion represents essentially xanthomatosis arising in the presence of an altered cholesterol-cholesterol ester ratio and repeated minor trauma. From a study of a detailed description of 55 cases of tendon sheath lesions and several related lesions of synovial membranes of joints and bursae, Jaffe and coworkers [2] concluded that all these lesions are essentially variations of the same process, the result of an inflammatory response of unknown etiology, and classified them as pigmented villonodular synovitis, bursitis, and tenosynovitis. They believed the basic pathologic process to be one of phagocytosis and fibrosis, both of which are characteristic of chronic inflammation. From an investigation of 85 cases Wright [3] concluded that xanthomas of tendon sheaths and synovial membranes are true synovial cell neoplasms and proposed that these lesions be called benign synoviomas.

All these authors agree that the polyhedral stromal cell is the essential cell of

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the lesion and that its phagocytic nature is responsible for the variable appearance of the tumor through the formation of foam cells, hemosiderin filled cells and giant cells. Wright [3] pointed out that phagocytosis is a basic function of a synovial cell together with its secretory ability for articular lubrication. Both of these qualities seem to be retained in the neoplastic cell and an important characteristic of these tumors is the presence of synovial lined clefts.

The histologic appearances of five lesions of tendon sheaths and one lesion of a joint will be described and compared with the descriptions of such lesions in the literature.

REPORT OF CASES

Case No. 1.—A white woman, aged 36 years, had a small, gradually enlarging mass near the proximal interphalangeal joint of the right ring finger. This had been noted for only ten days. The tumor was locally excised from the sheath of the flexor tendons. It was less than 1 centimeter in diameter, oval shaped and of reddish color. The cut surface was white with red flecks. Microscopically, the lesion consisted of loose, dense nests of polyhedral and spindle cells resembling synovial membrane at the edges of the tumor which were not covered by a thin fibrous capsule. Many variable sized clefts were formed within the mass and were lined by similar synovial appearing cells. Mitoses were common. The tumor lacked pigment, foam cells and giant cells. It was not fibrotic (Fig. 1).

Case No. 2.—A Negro girl, 10 years of age, had a mass on the flexor surface of the right index finger for about six weeks. This was locally excised and found attached to the tendon sheath of the flexor tendons. It was yellow and about 1 centimeter in diameter. Microscopically, the tissue consisted of closely packed spindle and polyhedral cells resembling synovial cells at the edge of the section which was not covered by a thin fibrous capsule. Within the mass were many small and a few large clefts which were lined by similar synovial cells. Mitotic figures were common and giant cells were also prevalent. Groups of hemosiderin containing cells were numerous about the edge of the mass. Foam cells and fibrosis were not observed (Fig. 2).

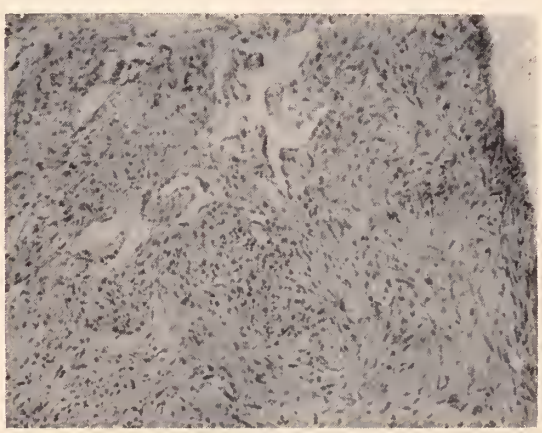


Figure 1. Photomicrograph (X 100) of a 10 days' old tumor which shows masses of polyhedral and spindle cells with clefts lined by synovial-like cells also noted at the edge of the section.

Case No. 3.—A white man 63 years old had a mass on the volar surface of the left index finger for at least four months. This was locally excised from its attachment to the flexor tendon sheath. The tissue was firm and yellow to orange colored with translucent areas. Microscopically, the tissue was composed of large nests of polyhedral and spindle cells which resembled synovial cells at the edge of the section.

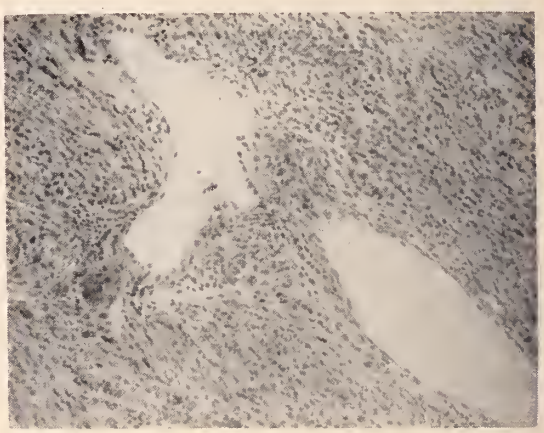


Figure 2. Photomicrograph (X 100) of a six weeks' old tumor showing masses of polyhedral cells and two large clefts with synovial-like lining. Giant cells and pigment are also noted.

These nests were separated by large masses or narrow bands of typical foam cells. Many clefts were found which were lined by similar synovial cells. Mitotic figures were not found. Giant cells were common and pigment filled cells were in scattered groups. No fibrosis was noted (Fig. 3).

Case No. 4.—A white woman, aged 55 years, had a mass about the flexor surface of the proximal phalanx of the right thumb for more than four months. It had increased in size, notably in the previous three weeks. The mass was locally excised from its attachment to the flexor tendon sheath. It was about 1.5 cm. in diameter and was pink to grey in color with many small yellow spots on the cut surface. Microscopically, the tissue consisted of large and small masses of closely packed polyhedral cells separated by

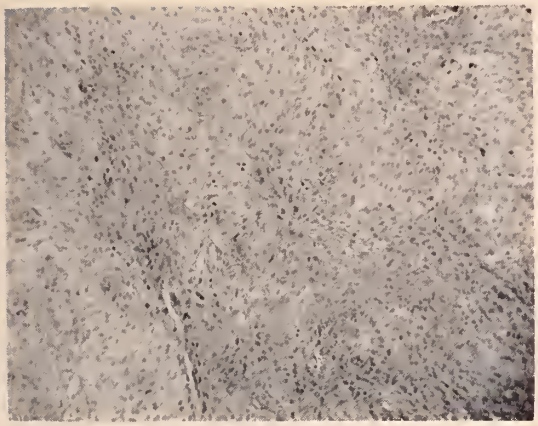


Figure 3. Photomicrograph (X 100) of a four months' old lesion showing masses of polyhedral cells separated by large nests of foam cells. A cleft is seen in the lower part of the section. Giant cells and pigment were also found in this tumor.

thick strands of collagenous tissue. Many of these nests of cells contained foam cells and pigment filled cell groups. Giant cells were numerous as well in these nests and appeared to be in clefts formed between the polyhedral cells. No mitoses were found (Fig. 4).

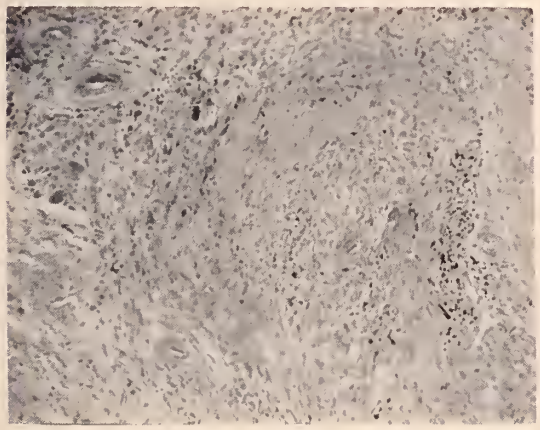


Figure 4. Photomicrograph (X 100) of an older tumor showing polyhedral cells and considerable fibrosis. Giant cells are present in small clefts within the polyhedral cell masses. A large cleft is present in the right lower corner.

Case No. 5.—A white man, aged 68 years, had a mass at the base of the right index finger for at least four months. It was excised from the flexor tendon sheath. It measured 5 by 3 cm. and was irregularly lobulated, firm, grey-white in color with many yellow patches on the cut surface. Microscopically, the tissue consisted of nests of polyhedral cells separated by strands of collagenous tissue. These nests of polyhedral cells in many areas were typical foam cells and some other areas were filled with pigment containing cells. Giant cells were common among these nests and giant cells frequently filled numerous small clefts lined by synovial like cells. No mitoses were noted (Fig. 5).

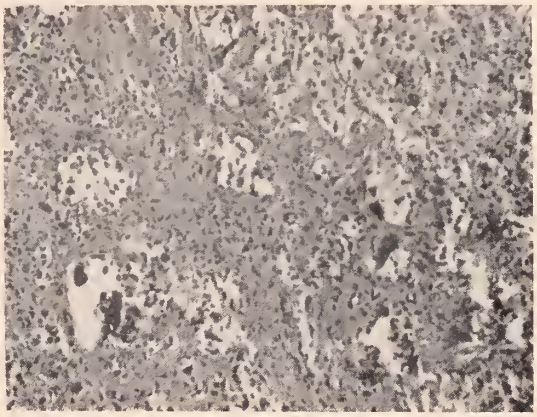


Figure 5. Photomicrograph (X 100) of a tumor with more pronounced fibrosis separating nests of polyhedral cells which are almost entirely foam cells. Many giant cells are also present in these spaces containing foam cells.

Case No. 6.—A white woman, aged 35 years, had had pain in the left hip for about three months. Roentgenography revealed a bone eroding lesion outlined by sclerosis of bone on either side of the joint. Complete synovectomy with fusion of the left hip joint was done. The synovial membrane consisted of irregular masses of reddish-brown shaggy tissue, some of which appeared necrotic and others granular. There were several smooth circumscribed fragments up to 2 by 1 cm. which were golden yellow and firm. The tissue removed weighed 10 Gm. Microscopically, the tissue was synovial membrane which was greatly thickened and thrown into innumerable villi. Each villus contained many large blood vessels. Between the vessels and especially in the nodular portions of the tissue were masses of polyhedral cells heavily laden with hemosiderin. Similar cells without hemosiderin surrounded many of the vessels. Synovial clefts were present within these masses but were not prominent. Many of the polyhedral cells appeared to be forming foam cells. Giant cells were inconspicuous. Mitoses were not noted (Fig. 6 and 7).

DISCUSSION

Examination of five xanthomatous lesions from tendon sheaths and one lesion from a joint synovial membrane has led us to agree with the concept of Wright.[3] The stromal cell is a synovial cell in neoplastic growth and retains its synovial characteristics. Portions of the growths not covered by fibrous capsule to compress the structure have the cellular arrange-

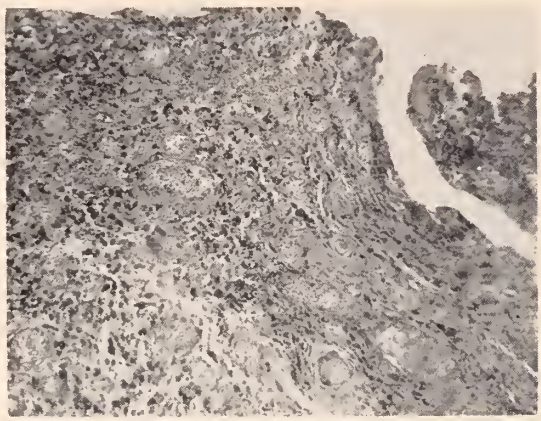


Figure 6. Photomicrograph (X 100) of a lesion from the synovial membrane of the hip joint showing pronounced thickening due to growth of polyhedral cells many of which are filled with pigment. The vascularity is prominent.

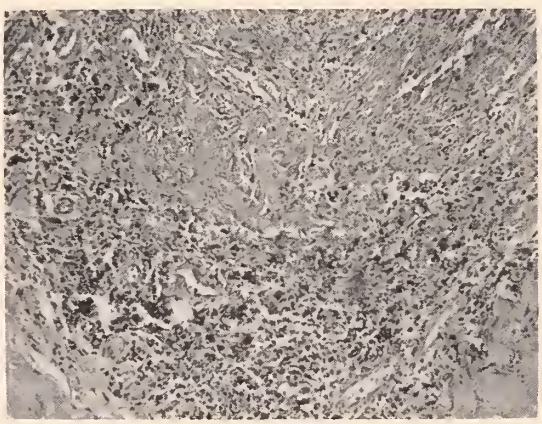


Figure 7. Photomicrograph (X 100) of a section from a deeper portion of the tumor shown in Figure 6 shows masses of polyhedral cells containing pigment and synovial-like clefts. The appearance is quite similar to that of the lesions shown in Figures 1 to 5.

ment of synovial membrane. Wright [3] has shown that this portion of the mass is continuous with the adjacent synovial membrane in several of the tumors which he described. The central portions of the growth contain numerous small and large spaces clearly lined by synovial cells, and frequently giant cells are seen to project into these spaces. The giant cells are apparently formed from these lining synovial cells and as well from among the stromal cells of the tumor.

Phagocytosis is pronounced in the synovial cells comprising this tumor. Foam cells and hemosiderin filled cells are present in all but the youngest of these tumors (Case No. 1). The older tumors become considerably fibrosed perhaps from direct transformation of the stromal cells into fibroblasts. The multipotential nature of the synovial cell has been repeatedly described.[4]

Accumulation of lipid and pigment by these cells is generally considered to be a result of trauma and maturation of the tumor. Stewart [5] was one of the first to point out that accumulation of lipid by a cell which is essentially a histiocyte is not unusual. Fibrosis seems to be an aging process and is a reflection of the synovial cell characteristic to differentiate into other cell types. Fibrosis can thus be considered as a healing response and the formation of foam cells as an index of the chronicity of the lesion. The first two tumors described are the youngest and they do not show either foam cells or fibrosis.

Stewart [5] also suggested that the term xanthoma is a misnomer for this lesion and listed numerous tumors which contain foam cells yet are not xanthomatous. Since the lesions of Case No. 1 and Case No. 2 do not show foam cells, it is difficult to include this lesion among the essential xanthomatoses as advised by Galloway and associates.[1]

The lesion described in Case No. 6 shows the similarity of the process developing in a large synovial membrane in the hip joint. The unhampered growth of the tissue into a joint space where it is subject to greater trauma probably accounts for the more diffuse growth and greater accumulations of hemosiderin filled cells than in the more confined lesion of a small tendon sheath.

The process, as seen in the cases herein reviewed, would seem to be true neoplasia of synovial cells and should be considered a benign synovioma. The benign nature of these lesions is generally accepted but recurrences are common unless they are completely excised. Stewart [5] reported a recurrence rate of 48 per cent in his 85 cases. One of our patients (Case No. 3)

has a recurrent mass at the operative site. Metastases have not been reported but instances of malignant synovioma have been found in the sites where benign synoviomas more commonly occur. Because malignant and benign lesions of this type are so similar, careful histologic study is mandatory.

SUMMARY

Five "xanthomas" of tendon sheaths and a similar lesion of a joint synovial membrane have been described.

The lesion has the characteristics of true neoplasia.

The characteristic feature is the polyhedral cell stroma which differentiates into synovial lined spaces within the tumor. Variations in the appearance of the tumor are due to the developmental age of the lesion.

The lesion should be considered as a benign synovioma but current popular usage prefers the term "xanthoma."

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SEXUAL IMPOTENCE *

IRVING J. GLASSBERG, M. D.
NEW ORLEANS

As a practicing urologist, one is often drawn into conversation by friends, both professional, and nonprofessional on the subject of sexual impotence. The second group, usually in the vicinity of fifty years of age, or older, is very jocular about the matter, and broad hints are given to the effect that one is privy to some esoteric and mystic secrets which can produce an immediate and gratifying return to a youthful state upon request. Professional colleagues, on the other hand, casually inquire as to what may be new in the treatment of the condition, and, before a reply is forthcoming, launch at once into an exposition of their own favorite theories and practices. All of which forces us to conclude that the annoying problem is still with us, as urgently as always. For, indeed, the patient suffering—and I use the word deliberately—from sexual impotence has presented a strenuous challenge to the physician since the dim days of antiquity. Medical history, for those of you who enjoy studying it, is replete with curious and bizarre attempts at cure since the distant past. One can well believe, then, that the modern practitioner of the art of healing is performing a traditional gesture when he throws up his hands in frustration and perplexity while striving to cure the impotent male. Nevertheless, we have made some progress, and the problem has become more soluble as our knowledge and skill have advanced. Divergent views among doctors persist, however. Some hold all such cases to be psychic in origin, while others insist that behind the psychic element lies an ever-present lesion. It is the purpose of this essay to present a view attempting systematically to integrate these disparate ideas. The opinions have been formed from personal experience with cases in private practice. I shall not review, here, the extensive literature.

Let us define impotence as that state in which the male, after puberty, is unable satisfactorily to perform intercourse. This is broad, inclusive, and without subtlety. It presents simply and accurately the patient's complaint.

A word of caution at the outset—be prepared to give these patients time, if you accept them for treatment. A five minute consultation does not suffice, and the application of a routine therapy for all patients is pernicious and unsupportable. With these, of all patients, the cloth must be cut to fit the pattern. One should decide early just what is expected and

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 3, 1955.

desired by the patient, and, after that, whether or not one feels capable of satisfying the requirements. If the patient's request seems obviously beyond one's skill, as in the case of a seventy-year-old man who limped into my office assisted by a cane and held the receiver of his hearing-aid apparatus close to me for my shouted replies, it is best to practice discretion and modesty. In such a case, valor is insufficient. We are still disciples of a limited art.

At the first consultation, a patient and searching history must be obtained. One does not waste time with ribald jokes, as not only has the patient already heard them all, but also his tide of humor is at low ebb at the moment. Instead, one seeks to learn all that can be elicited, with greatest emphasis on two points — the circumstances attending early failures, and whether or not an adequate erection has ever occurred day or night, expected or surprising, planned or unplanned, since onset of the condition.

The circumstances are of primary importance. One must know whether pain or other physical discomfort, fatigue, or anxiety were present. Business cares, lack of privacy, guilty conscience, distaste for partner, or simple waning of libido with passing years—any of these and their ramifications should be known. Often the patient has forgotten, or wilfully conceals, such important and necessary bits of information in his history, and adroit questioning can assist him in recalling or admitting them. The patient should be told firmly that complete candor on his part is indispensable. Not infrequently, this admonition serves to favor disclosure of the pertinent data most desired. At the same time, the physician is able to estimate whether he is faced with a case of fixed impotence, or with a simple single and transitory failure. Such occasional failures can, of course, beset any man, be he lusty youth, deliberate middle-ager, or still vigorous oldster. Should such be the case, extensive treatment is unnecessary, and some good counsel is all that one need provide. If the complaint is that of continuous failure, further consideration is in order.

In regard to the second major point, it must be reiterated time and again to the patient that a single perfect erection is incontrovertible evidence of the intrinsic competence of the mechanism of erection. Once comprehended by him, the battle, if not half-won, is at least well begun, for it is well known that man's fear of baldness, or corpulence, or other marks of physical ageing, are as nothing compared to his fear of impotence. If he can be assured from the beginning of care that he is basically sound in body, the groundwork for cure is already solidly prepared.

One may also take advantage of this phase of the consultation to relieve the patient of any misconceptions he may entertain regarding the possible causal role of coffee, tobacco, liquor, or other agent which he assumes, or has been told, is at fault in his case.

In questioning the patient about his sexual practices and habits, names must be named and spades so designated. Do not assume, for instance, that the patient understands the physiological distortion and pernicious results arising from the practice of withdrawal. Inquire. You may be surprised. Learn also what misinformation he may have about normal sex practice in general. We, here, are well-acquainted with the traditional confusing explanations and revelations that we received in the days of our boyhood and youth. The drug-store and vacant lots still have their gatherings of youngsters. To alter and rectify this incorrect information will require time, but it also will provide keys to the individual problem. Every patient should understand that sexual athletecism is in the province of sexual athletes, and that, just as all of us are not uniformly skilled to perform superiorly in athletic games, so all of us are not equal in our sexual potentials. He must be helped to realize that each man should be a law unto himself, based upon his own endowments, and impressions gained from

hearsay about the performances of others are not applicable, nor to be emulated.

With one notable and important exception, the physical examination cannot be expected to yield information of much value. The exception is, of course, the prostate and its companion seminal vesicles and contained posterior urethra. Inflammatory processes in this area can be the source of much physiological mischief on occasion, and the possibility should not be forgotten. One may find every degree of inflammation from mild to severe, in the prostate, or seminal vesicles, or about the veru montanum. Although it is easy to fall into the error of assuming that the demonstration of the inflammation has thereby disclosed the cause of the complaint, it is nevertheless equally unfortunate to disregard the possible contributory role played by such change, and by such disregard, fail to give indicated treatment.

When the physician is satisfied that the diagnosis is, indeed, that of a given type of impotence, the selection and design of the treatment is in order. In most cases, this results in the use of both physical and medicative elements, in conjunction with instruction concerning normal physiology and function. One should avoid, however, being too complex or erudite in explanation, as the patient's technical comprehension is necessarily limited.

When prostatitis is found, massage of the gland is helpful. However, permit me to emphasize that unless improvement is prompt and dramatic, treatment should not exceed three or four visits. Prolonged massage has never cured an impotent patient in my experience. A few treatments will relieve congestion, which is all that one can hope to do at this point. During the first few days, it is of value to prescribe a sulfa preparation as a prophylactic measure against an exacerbation of acute prostatitis. The antibiotic drugs have no special value here, and need not be used. It should be recalled that, quite often, no pus is obtained from the gland at first, or second massage, but does appear soon after. When this occurs, drainage has been established, and from the standpoint of the impotence, further treatment of the gland is superfluous.

In addition to prostatitis, some patients present congestive inflammation of the veru montanum, or hypertrophy or polyposis of this structure. Endoscopy will demonstrate such conditions, but is not usually necessary. Instead, the passage of a medium-sized sound, perhaps 22 French, will serve to treat such a state, particularly if followed by the instillation of a mild silver nitrate solution into the posterior urethra by means of a Keyes instillator. Anyone who can pass a sound, can also pass the latter instrument. Unless, again, almost immediate improvement is noted, desist. Continuous treatment is not justified. Be parsimonious here. It is best to discontinue all treatment as soon as the desired result is obtained, as there is no experience to justify prolonged treatment for maintenance value in the usual case. If recurrence of the condition follows cessation of treatment, occasional repetition may be tried. However, one may well wonder at this time whether the treatment, or the idea thereof, is the effective component.

The androgenic hormone has failed to be of value in the cases under my care, and has been discarded. Having been consulted by patients with testicular dimensions from small to large, and with physical characteristics from masculine to effeminate, it has become apparent that correlation is lacking. Trials of the medication supported the suspicion, for the less virile types did no better than their more imposing brothers—who did not do well at all.

Anesthetic ointments for local application to reduce sensitivity and retard reaction have also proved to be ineffective. It might seem that, for cases of premature ejaculation and transient erection, such ointments would logically be indicated. Their use has not confirmed the reasoning, and their failure has been splendid and complete.

This essayist has not employed any of the surgical procedures that have been devised for the treatment of impotence. Plication of perineal musculature, reduction of speed of vascular drainage by interfering with dorsal vein, implantation of firm substances, such as cartilage—all these have been used. They might be of value in some cases.

All of these patients are anxious, if not actually frightened. For relief of these unsettled emotional states, the mood-modifying drugs are of distinct value. Of these, those which relax, rather than stimulate, seem most helpful. Here again, however, medication should be brief—certainly no more than a week or ten days. Prolonged medication has not proved fruitful.

While it is not the intent of this writer, nor the purpose of this paper, to invade the realm of the psychiatrist, it seems quite proper for us who practice in other fields to give elementary psychiatric assistance to our patients, within the limits of our ability. Banal and trite though it may be, it still must be said that we should treat the whole patient, not the isolated tract. Furthermore, many patients are not prepared to undertake formal psychiatric study and treatment, for reasons of purse or preference. Since the psychic factor bulks so large in these cases, it is well to give the patients some elementary instruction as to what constitutes an orderly sexual life. This may be an uncongenial task for the physician, but it is sorely needed by the patient. One will often be astonished if not exasperated, by the immature conception of normal sex practice in adult males. Warn the patient against trial performances. He should be advised not to attempt coitus unless the urge is strong and not to be put aside. He should know that there is no established frequency of copulation for all men, and that his own involuntary rhythmic physiologic impulses are his best guides. He should be relieved of the belief that systematic coitus is necessary to health, as is believed by so many. This false concept is kin to the homage paid regular use of laxatives.

It is my feeling then, that, though no panacea is yet known for the triumphant cure of all cases of impotence, a reasoned approach to the problem can be made, and that methodical unravelling of the tangled elements can be performed by the average practitioner. Once that is done, gentle and intelligent use of the simple methods I have recounted will yield, I firmly believe, a satisfactory result in many cases. In none have I found prolonged care either rewarding or justified in the final result.

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PHYSICIANS' SUPPORT FOR THE AMERICAN MEDICAL EDUCATION FOUNDATION

Physicians' support for the American Medical Education Foundation is as urgently needed today as when it was first proposed. In January 1951, the suggestion was made in these columns that the medical profession contribute to the support of medical schools in order that their deficiencies might be met and that they might not fall into socialist domination by way of government support with tax money. During that year the American Medical Association sponsored the American Medical Education Foundation, to raise funds from the medical profession. Among a different group of public citizens, the National Fund for Medical Education was organized to seek contributions from business, industry, and other segments of our society. Through the efforts of their committees, the American Medical Education Foundation and the National Fund for Medical Education have provided almost seven million dollars in the form of unrestricted grants to the nation's medical schools since 1951. Of this, the medical profession has provided slightly more than 50 per cent of the moneys distributed to date.

Impressive as this total is, much more is needed if we are to keep the medical schools operating in an atmosphere of freedom. The reasons for this situation are quite simple. Excessive taxation has reduced money available for endowment. Following this, a further reduction in medical school resources came with the declining purchasing power of the dollar. The latter resulted from the era of profligate spending, deficit financing, and inflation of the currency, which is now going on. With restriction of their resources, medical schools had great difficulty in holding adequate faculties, both full and part-time, because of low academic salaries. Basic operating expenses doubled during the past ten years and are still on the increase. Student tuition provides only about one-fifth of the actual cost of educating a physician. Still further adding to the expense of medical education is the fact that there is more medicine to teach and more staff members are required to teach it. In the past two decades there are many specialized procedures and subdivisions in the field of medicine which require particular support. Provision for these, increases the total staff and the total expense.

A goal of two million dollars a year has been set as the contribution from physicians through the American Medical Edu-

cation Foundation. Just over half this annual sum was provided in 1954. It is estimated that a total of ten million a year will be needed, and the remaining eight million—it is hoped—will be raised from business, industry, and other sources. In 1954, fifty-seven thousand physicians, or 28 per cent of the profession, made financial gifts to medical education, either through their alumni associations or through the A. M. E. F. Other medical sources beside individual gifts from physicians have been contributed by some State Associations who raised dues, and many worthy units of the Woman's Auxiliary to the American Medical Association.

The welfare and independence of our medical schools is at stake in this program. Without its continued and successful support, the schools will be forced either to dilute the quality of the teaching provided, or accept needed funds from federal sources. Either alternative is undesirable. In order to have future members of the medical profession who will qualify to carry on the traditions that medicine has inherited, and to discharge its obligation to posterity, funds must be provided. If the schools became dependent upon federal tax money, socialism as a whole, and socialization of medicine in particular, would become an accomplished fact in less than two generations.

Where many other countries have looked in time of financial stress to their central governments for legislation to solve their social problems and medical needs, we, in the United States wish to continue to rely upon the intelligence and generosity of the individual, including the physician himself, to furnish the necessary funds to meet these needs. The preeminence of American medicine today is the result of capability and initiative in a free atmosphere. Private philanthropy must provide the means by which this can continue.

Medical education is the most expensive that there is. Many reasons make it so. Long periods of training, expensive laboratory equipment, high ratio of teacher to student, together with the many complicated and highly technical procedures recently introduced into medical practice. Our national health is not the bounty of the Creator, but a product of many factors that go to make for healthy living, above all good medical care. The doctors who provide this care and the medical schools which train them are essential. Neither can continue without adequate financial support.

The individual physician can give to the American Medical Education Foundation directly or he can give through his alumni organization. The important thing is that he should give.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

DIABETES DETECTION DRIVE REQUESTS DOCTORS COOPERATION

The Committee on Diabetes of the Louisiana State Medical Society wishes to have each physician test patients' urine specimens for sugar, free as a contribution to the Diabetes Detection Drive, to be held November 13-19, 1955. The Committee would like a report of the number of patients tested during that week and the number of positive reactions obtained.

If there is a Parish or District Committee on Diabetes in the community this information should be sent to them direct.

Literature regarding the Diabetes Detection Drive will be sent to each doctor and he is requested to place the small leaflet entitled **Check Facts** on the waiting room table.

Free Clinitest or Galitest powder are available on request directly to the Committee. Please address communications to Dr. Daniel W. Hayes,

Chairman, Committee on Diabetes, Louisiana State Medical Society, 1430 Tulane Avenue, New Orleans 12, Louisiana.

MEDICAL SCHOOLS MAY FACE RECRUITMENT PROBLEM

American medical schools set all-time enrollment and graduation records in 1954-55, but they may face a student recruitment problem in the next few years, according to a report by the American Medical Association.

Prepared by the A.M.A.'s Council on Medical Education and Hospitals, the 55th annual report on medical education said 1954-55 was a year of "steady progress" in various phases of medical education.

An enrollment problem may result because applications to medical schools have been decreasing for the past five years. However, the decrease this year was smaller, and it is hoped that a plateau has been reached. In the meantime, some schools may have difficulty in filling all available openings with qualified students.

Only 16.8 per cent of the entering class in 1954-55 had an "A" college record, while 69 per cent had "B" and 14.2 per cent had "C".

There were 6,977 physicians graduated last year from 75 approved four-year medical schools. This is the sixth consecutive year that a graduation record has been set. There has been an increase of over 1,400 in the number of graduates since 1950.

Next year's class probably will be slightly smaller. However, the report said any decrease will be "only an incident" in a continually expanding number of graduates in years ahead, since classes scheduled for graduation in subsequent years are somewhat larger than next year's. Seven more schools will be graduating physicians by 1960.

Four are new schools just opened or in various stages of development: Albert Einstein College of Medicine at Yeshiva University, New York City; University of Miami Medical School, Coral Gables, Fla.; Seton Hall College of Medicine, Jersey City, N. J., and University of Florida School of Medicine, Gainesville, Fla.

The other three are two-year basic medical science schools that are expanding their programs to four years: University of Mississippi School of Medicine, Jackson, Miss.; University of Missouri School of Medicine, Columbia, Mo., and West Virginia University School of Medicine, Morgantown, W. Va.

Eighty-two per cent of the first year class in 1954-55 will be liable for military service on completion of medical school and internship training. Seventy-three per cent of the class graduated in June, 1955, was liable for such service, the report said.

Total enrollment in American medical schools during 1954-55 was 28,583—an increase of 356 over the preceding year. Approximately two-thirds of the increase is accounted for by the addition of the University of California School of Medicine, Los Angeles, to the approved list.

The entering class of 7,576 in the nation's medical schools was the largest ever enrolled. This was an increase of 127 over the preceding year. Half of the increase in the entering class was accounted for by the addition of a first year class at the newly approved California school.

The number of individuals other than undergraduate medical students who received all or part of their instruction from medical faculties was twice as great as the total number of undergraduate medical students. These include students in dentistry, pharmacy, nursing, medical technology, and arts and science, interns, residents, physicians working for advanced degrees, and other graduate students in the basic sciences.

The report also said projected 1955-56 budgets show there has been a "modest improvement" in medical school financing.

Approximately 95 per cent of support of important research now conducted in medical schools is made possible and is dependent upon grants-in-aid from outside agencies. Estimates for 1955-56 indicate that outside agencies will give about $54.5 million to medical schools for the support of research activities and slightly over $7 million for special teaching programs.

This is in addition to the estimated $98 million from tuition, endowment income, legislative appropriation, gifts and grants that support the basic teaching programs of the medical schools.

More than $2 million was given to medical schools during 1954 by the National Fund for Medical Education. This fund is supported by business and industry and by physicians who contribute to the fund through the American Medical Education Foundation. The A.M.A. annually gives a direct contribution to the foundation.

During 1954-55 completed construction by medical schools totaled more than $99 million and construction initiated totaled more than $80 million. In addition, many hospitals and clinic facilities used in teaching were financed by government or private funds and not by the schools.

There are 251 faculty vacancies reported for the 1955-56 session—seven less than in 1954-55. In view of the new schools and new faculty appointments, this slight improvement is perhaps more significant than it appears, the report said.

There were 1,537 women attending medical school. This was a slight increase over the previous year. The 345 women graduates was the smallest number since 1947.

The year witnessed the largest recorded attendance—105,466—at 1,719 short courses, conferences, assemblies, seminars, and study and circuit courses for practicing physicians wishing additional training.

NARCOTICS

The following is a statement of the amended regulations of the Federal Commissioner of Narcotics concerning the prescribing orally (by telephone) of narcotic drugs.

FINDING AND DESIGNATION OF NARCOTIC DRUGS AND COMPOUNDS OF NARCOTIC DRUGS SUBJECT TO ORAL PRESCRIPTION PROCEDURE

Pursuant to authority delegated by Treasury Department Order No. 180-2 (19 F. R. 6399), and under section 7 of the act of August 31, 1954 (68 Stat. 1001); 26 U. S. C. 4705), and article 172 of Narcotic Regulations 5 (26 CFR 151.172; 20 F. R. 1132), the following narcotic drugs and compounds of narcotic drugs are hereby found and designated to possess relatively little or no addiction liability:

§ 151.172a. **Narcotic drugs and compounds for which oral prescription is authorized.** (a) Any isoquinoline alkaloid of opium or any salt of any such isoquinoline alkaloid, alone or in combination with other active, non-narcotic medicinal ingredients.

(b) Apomorphine or any salt thereof, alone or in combination with other active, non-narcotic medicinal ingredients.

(c) N-allyl-normorphine (Nalorphine, Nalline) or any salt thereof, alone or in combination with other active, non-narcotic medicinal ingredients.

(d) Any compound consisting of methylmorphine (codeine) or of any salt thereof with an equal or greater quantity of any isoquinoline opium alkaloid or salt thereof, where the content of methylmorphine or any salt thereof does not exceed eight grains per fluid ounce or one grain per dosage unit of the compound.

(e) Any compound consisting of methylmorphine (codeine) or of any salt thereof with one or more active, non-narcotic ingredients in recognized therapeutic amounts, where the content of methylmorphine or salt thereof does not exceed eight grains per fluid ounce or one grain per dosage unit of the compound.

(f) Any compound consisting of dihydrocodeinone (Hydrocodone, Dicodid, Hycodan) or of any salt thereof with a four-fold or greater quantity of any isoquinoline opium alkaloid or salt thereof, where the content of dihydrocodeinone or any salt thereof does not exceed one and one-third grains per fluid ounce or one-sixth grain per dosage unit of the compound.

(g) Any compound consisting of dihydrocodeinone (Hydrocodone, Dicodid, Hycodan) or any salt thereof with one or more active, non-narcotic ingredients in recognized therapeutic amounts, were the content of dihydrocodeinone or of any salt thereof does not exceed one and one-third grains per fluid ounce or one-sixth grain per dosage unit of the compound.

(h) Any compound consisting of dihydrohydroxycodeinone (Oxycodone, Eucodal) or any salt thereof with one or more active, non-narcotic ingredients in recognized therapeutic amounts, where the content of dihydrohydroxycodeinone or of any salt thereof does not exceed two-thirds grains per fluid ounce or one-twelfth grain per dosage unit of the compound.

(i) Any compound consisting of ethylmorphine (Dionin) or of any salt thereof with one or more active, nonnarcotic ingredients in recognized therapeutic amounts, where the content of ethylmorphine or any salt thereof does not exceed one and one-third grains per fluid ounce or one-sixth grain per dosage unit of the compound.

Because the finding and designation made by this Treasury decision relieves restrictions, it is found unnecessary to issue the decision with notice and public procedure thereon under section 4 (a) of the Administrative Procedure Act, approved June 11, 1946, or subject to the effective date limitation of section 4 (c) of that act.

This Treasury decision shall be effective upon its filing for publication in the FEDERAL REGISTER.

(68 Stat. 1001; 26 U. S. C. 4705)

[SEAL] G. W. CUNNINGHAM,
Acting Commissioner of Narcotics.

SEPTEMBER 1, 1955.

[F. R. Doc. 55-7200; Filed, Sept. 2, 1955; 8:56 a. m.]

BOSTON CLINICAL SESSION

This year's American Medical Association clinical meeting in Boston Nov. 29 through Dec. 2 is expected to be the largest ever held, the A.M.A. has announced.

The postgraduate education meeting, aimed at helping to solve the daily practice problems of the family physician, is expected to be attended by some 4,000 persons, a large increase over last year's meeting. About 200 scientific papers and exhibits have been scheduled for presentation, according to Dr. Thomas G. Hull, secretary of the A.M.A.'s Council on Scientific Assembly.

Meetings will be held in Mechanics Hall and at the Statler Hotel where the House of Delegates, the A.M.A.'s policy-making body, will hold sessions. Papers will be given in three lecture halls, offering the physician a wide variety of choice in subjects.

Closed circuit television programs, originating in New England Deaconess hospital, will bring live operations in color to the lecture hall. The program is again being sponsored by Smith, Kline and French Laboratories of Philadelphia.

More than 50 motion pictures will be shown during the meeting, in the Paul Revere Annex of Mechanics Hall. A new medical film will be premiered at a special program at 8 p.m. Wednesday, Nov. 30, in the Georgian Room of the Statler Hotel. Following the premiere will be a

special film and discussion on "Total Right Hepatic Lobotomy" by Drs. George T. Pack and Richard D. Brasfield, Memorial Hospital, New York City.

The General Practitioner of the Year will be named during the meeting. Last recipient of the award, chosen in Miami, was Dr. Karl Pace of Greenville, S. C.

An entertainment sidelight of the meeting will be a special concert for registrants by the Boston Symphony on Thursday, Dec. 1. Tickets will be given at the registration desk in Mechanics Hall, courtesy of Winthrop Stearns, Inc., New York pharmaceutical house.

Louisiana was well represented at the annual session in June, 1955. We sincerely hope that a large number of our members will attend the Boston meeting since a very interesting program has been planned. Will look forward to seeing you in Boston.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

PROGRAM AND STANDING COMMITTEES FOR 1956

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

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POLITICS AND MEDICAL CARE

Someone mailed Dr. F. J. L. Blasingame, A.M.A. Trustee from Texas, the following clipping, entitled "Private Security," from the Dallas Morning News:

"Ninety-five of every 100 workers are now covered by some kind of private—not government—benefit program. This is not the brag of private business. It is a government figure.

"Nine of ten have life insurance. Eight of ten have hospital insurance, and more than half of those have surgical policies. Six of ten are covered for sickness and accident. Five of ten have medical care. Six of ten have their own company pension coverage.

"Yet, there is growing pressure in Washington for the Federal Government to get into the medical business. It makes just as much sense as the government going into the automobile business so that those who don't have a car can have one—at taxpayers' expense. That pressure is for political 'care,' not medical care."

ATTENTION TO NORMAL HEPATIC FUNCTION RECOMMENDED IN TREATMENT OF OBESE PATIENTS

Closer attention to liver function in the treatment of the obese is recommended by a physician in Chicago.

He states that it may be more significant than an increased metabolism such as produced by thyroid medication.

Dr. Hyman Sapoznik tried six different formulas on a group of 46 private patients. Five of the six contained amphetamine or a derivative, alone or in combination with thyroid hormone. The sixth, having only small doses of d-Amphetamine and phenobarbital, contained vitamin B12, methylcellulose and lipotropic agents as well.

Dr. Sapoznik reports on his study in **The American Journal of Digestive Diseases** (22:159, 1955).

The best reducing combination was the formula containing the lipotropics, which mobilize body fat for metabolic burning. First preparation to contain lipotropics, it is called Obolip (Lakeside Laboratories, Inc.).

ALEVAIRE EFFECTS RELIEF IN ACUTE AND CHRONIC ASTHMA

Effective relief was obtained in two series of patients with acute asthmatic attacks and chronic asthma following inhalation of the nebulized mucolytic detergent Alevaire, it is reported by Dr. D. Edward Frank in **Annals of Allergy** (13: 313, 1955).

All 14 chronic asthma cases received considerable relief from symptoms. Alevaire, Dr. Frank writes, "appeared to be responsible for 100 per cent relief in one case, 80 per cent relief in nine cases and 50 per cent relief in four cases." Seven of the patients discontinued using all other symptomatic medication, despite the fact several had emphysema in addition to asthma. The other cases reduced symptomatic medications by 50 per cent or more.

"PLEASANT" EFFECTS OF NARCOTICS DISPROVED

Some narcotics believed to produce pleasant stimulation just don't live up to their reputation under careful study, three Boston physicians report.

Much of the result of taking narcotics depends on the person and the situation, Drs. Louis Lasagna, John M. von Felsinger, and Henry K. Beecher, of Harvard Medical School and Massachusetts General Hospital, reported in a recent Journal of the American Medical Association.

They found that normal persons don't get much "kick" out of such well-known narcotics as morphine and heroin. On the contrary, normal volunteers felt sleepy, depressed, and generally unpleasant after taking experimental doses.

The physicians, seeking knowledge on the use of drugs as pain killers, tested several drugs on 80 volunteers. Twenty were healthy young men students, 30 were chronically ill, old, and hospitalized, and 30 were "postaddict" prisoners at the U. S. Public Health Service Hospital, Lexington, Ky.

SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association will hold its annual meeting in Houston, Texas, November

14-17, 1955. For the convenience of those planning to attend, the Missouri Pacific Lines offers the following schedules:

Leave New Orleans	The Orleanean	8:35 AM
	or The Houstonian	10:10 PM
Leave Baton Rouge	The Orleanean	10:45 AM
	or The Houstonian	12:20 AM
Arrive Houston	The Orleanean	6:10 PM
	or The Houstonian	7:50 AM

Return

Leave Houston	The Orleanean	9:05 AM
	or The Houstonian	9:35 PM
Arrive Baton Rouge	The Orleanean	5:00 PM
	or The Houstonian	4:55 AM
Arrive New Orleans	The Orleanean	7:15 PM
	or The Houstonian	7:05 AM

Special or extra sleeping car or cars will be operated for minimum of eighteen passengers. Rates and further information may be obtained from City Ticket Office, 207 St. Charles Street, or by telephoning RA. 3181.

SMOKING AND CHRONIC BRONCHITIS

Smoking should be considered taboo for the person who suffers from chronic bronchitis, according to Dr. David H. Waterman of **Knoxville, Tenn.**, who discussed this common chest ailment at the Annual Meeting of the National Tuberculosis Association.

The NTA and its medical section, the American Trudeau Society, and the National Conference of Tuberculosis Workers met recently in Milwaukee Auditorium. It was the 51st Annual Meeting of the NTA, the 50th Anniversary Meeting of the ATS, and the 43rd Annual Meeting of the NCTW. Approximately 2,500 persons active in the nationwide voluntary movement against tuberculosis, represented in Wisconsin by the Wisconsin Anti-Tuberculosis Association, attended the sessions.

Dr. Waterman, who is chief thoracic surgeon, Fort Sanders Presbyterian Hospital, called chronic bronchitis "probably the most common chest condition encountered by both general practitioner and specialist alike" which, although it may be present as a separate entity, may also be found along with such conditions as pulmonary emphysema, silicosis, soft-coal workers' pneumoconiosis, bronchiectasis, and asthma. Co-authors of the paper were Drs. Sheldon E. Domm and William K. Rogers, attending thoracic surgeons, and Arthur J. Pollard, bacteriologist at the Knoxville hospital.

BODY DEFENSE MECHANISMS

Special mechanisms by which the body destroys drugs and other "foreign" compounds have been discovered, revealing that the body has systems of "counter agents" that attack and inactivate drugs. The counter agents are contained in little-studied liver microsomes, tiny particles of the body's cells too small to be seen even with a microscope.

This discovery stems from research on the fate of drugs in the body being conducted by the Public Health Service's National Heart Institute, National Institutes of Health, Bethesda, Md. The research team includes Dr. Bernard B. Brodie, Julius Axelrod, Jack Cooper, Leo Gaudette, Dr. Bert La Du, Dr. Chozo Mitoma, and Dr. Sydney Udenfriend. A report of the study appeared recently in the technical journal, SCIENCE.

Knowledge of these mechanisms will be valuable, according to the study, in the designing of better drugs for specific action in the body.

Before the discovery of this function of liver microsomes, it was assumed that drugs were inactivated by becoming "enmeshed" in biochemical mechanisms which did not distinguish between drugs or other foreign compounds and substances used in the body's normal economy. The new finding establishes the existence of chemical systems which seem to work solely to limit the action of intruding foreign substances and which may have no function in the handling of substances that the body uses for nutritional purposes.

NEW DRUG SHOWS PROMISE IN RHEUMATIC DISEASES

Preliminary trial of a new drug, prednisone, indicated it may be "four to five times more potent" than two other compounds now used to relieve pain and other symptoms of rheumatic diseases.

Drs. Jack R. Dordick and Edward J. Gluck, Beth Israel Hospital, New York, described use of the drug in a small group of patients, in the (May 21) Journal of the American Medical Association.

They said these first results show the new hormone compound may have distinct advantages in treating patients with joint pain, tenderness, stiffness, and inflammation from rheumatoid arthritis, and patients with rheumatic heart disease or gout. Prednisone (Meticorten) appeared to have fewer side-effects than cortisone compounds, which have been used for these diseases.

The physicians treated 15 patients, including 12 with rheumatoid arthritis. All of them previously had received numerous other kinds of treatment with only slight relief. Within one day, the arthritis patients, after taking prednisone, reported disappearance of pain and lessening of stiffness. In a few days muscle pain and stiffness disappeared, and patients were able to walk, dress, and feed themselves with little or no pain. Seven of the 12 showed improvement in walking.

SPONGE RUBBER BOOT MADE FOR VARICOSE VEIN PATIENTS

Two New York state physicians have developed a zippered sponge rubber boot to relieve severe varicose veins of the lower leg.

Drs. Walter G. Gasner, Mt. Vernon, N. Y. and Maurice J. Costello, New York City, report initial results with the innovation in the (May 21) Journal of the American Medical Association.

In two women, severe varicose infections healed with a month's wearing of the boot. It healed a painful quarter-size varicose ulcer, present for five years on the leg of a 55-year-old woman. A three-year-old varicose skin eruption on the legs of a 52-year-old woman also healed, enabling her to walk without difficulty. Swelling in the legs also disappeared.

The boot is made of sponge rubber a quarter-inch thick, which is placed around the leg and pencil-marked to fit. The rubber then is cut out with a razor blade, and edges closed with adhesive tape and a zipper. A "horse track" bandage is wrapped around the boot after it is put on, for additional support.

The action of the leg muscles against the sponge rubber causes a "pump-like" action while walking, the physicians said.

—o—

BOOK REVIEWS

The Diagnosis and Treatment of the Infertile Female; by Fred A. Simmons, M. D., Springfield, Illinois, Charles C Thomas, 1954, Pp. 83, Price $2.50.

This is a monograph on the study of female infertility. The author stresses the necessity of a thorough history and physical examination of both partners, describing in detail the disorders of the genital organs and the various endocrine glands involved.

The chapters on the various tests and procedures in diagnosis and treatment of the various disorders are dealt with minutely.

The book includes two small chapters on the problem of adoption and psychosomatic approach.

ADOLPH JACOBS, M. D.

Resuscitation of the Newborn; by Joseph D. Russ, M. D., Springfield, Illinois, Charles C Thomas, 1953, Pp. 55, Price $2.50.

Not many years ago spasticity in young children, now more popularly known as cerebral palsy, was attributed to birth injuries. Moreover, these injuries were usually of the head and were caused by disproportion between the head and the pelvic outlet. It is true that hemorrhages on the cortical surface of the brain and the tearing of the more important vessels in the tentorium and the falx cerebri still occur but most such cases come to autopsy. In the light of later information we believe that cerebral palsy is more frequently caused by neonatal asphyxia, a condition which has long perplexed obstetricians and pediatricians. It is definitely the most frequent cause of death in the first twenty-four hours of life. It is caused by primary anoxemia which results in cerebral anoxia. This condition cannot last much beyond two or three minutes after birth without causing deterioration of brain tissue.

It is obvious, therefore, that measures of resuscitation should be initiated within sixty seconds after birth unless respiration starts promptly and normally. The first cry of a baby, therefore, is a heartening noise to all who appreciate the importance of a deep inspiration followed by a forceful expiration.

Dr. Russ has written this book in which he has presented his own personal experience in more than 2,000 resuscitations. It is published as a monograph in the American Lecture Series of the publisher. The contents consists of five chapters and an extensive bibliography for the benefit of those who wish collateral reading on this important subject. Nevertheless, Dr. Russ has presented the subject in a readable and comprehensive style and this book should be between the bookends on every doctor's desk for convenient consultation.

ROBERT A. STRONG, M. D.

PUBLICATIONS RECEIVED

J. B. Lippincott Co., Phila.: The National Formulary, published by the American Pharmaceutical Association (10th Edit.).

Philosophical Library, Inc., N. Y.: Textbook of Occupational Therapy, by Eamon N. M. O'Sullivan, B.A.; Present-Day Psychology, edited by A. A. Roback, Ph.D.

Pocket Books, Inc., N. Y.: Understanding Surgery, edited and compiled by Dr. Robert E. Rothenberg.

W. B. Saunders Co., Phila.: Office Procedures, by Paul Williamson, M. D.; Cancer Cells, by E. V. Cowdry; Textbook of Endocrinology, edited by Robert H. Williams, M. D. (2nd Edit.); Basic Surgical Skills, by Robert Tauber, M. D.; Cardiovascular Surgery, edited by Conrad R. Lam, M. D.; Cardiac Diagnosis, a Physiologic Approach, by Robert F. Rushmer, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Applied Medical Bibliography for Students, by William Dosite Postell, edited by Roscoe L. Pullen, M. D.; Splenin A in Rheumatic Fever, by Alvin F. Coburn, M. D., Lucille V. Moore, M. D., Mary Roberts, R. N., and Judith Wood, M. D.; Clinical Roentgenology, by Alfred A. de Lorimier, M. D., Henry Moehring, M. D., and John R. Hannan, M. D. (Vol 3).

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Once the habit of constipation has been established, due to any of a large number of causes, it becomes a major problem. Self-medication with irritant or chemical laxatives, or repeated enemas, usually causes a decreased, sluggish defecation reflex and may result in its complete loss.

Rectal distention is a vital factor in initiating the normal defecation reflex, and sufficient bulk is thus of obvious importance in restoring this reflex. Metamucil provides this bulk in the form of a smooth, nonirritating, soft, hydrophilic colloid which gently distends the rectum and initiates the desire to evacuate. Metamucil demands extra fluid, imparting even greater smoothage to the intestinal contents.

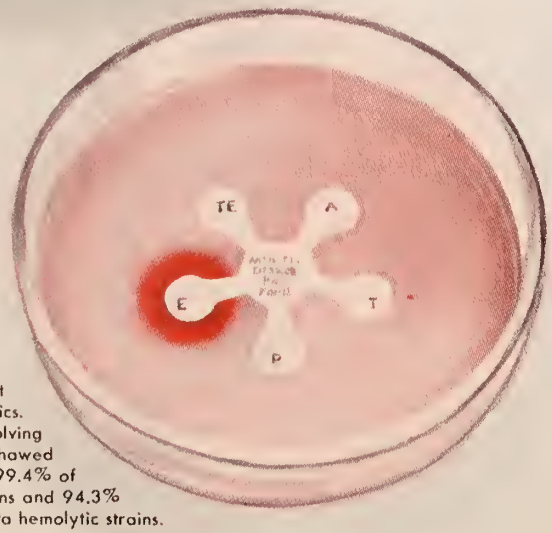
It is indicated in chronic constipation of various types—including distal colon stasis of the "irritable colon" syndrome, the atonic colon following abdominal operations, repressions of defecation after anorectal surgery and in special conditions such as the management of a permanent ileostomy. Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent.

The average adult dose is one rounded teaspoonful of Metamucil powder in a glass of cool water, milk or fruit juice, followed by an additional glass of fluid if indicated.

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This blood agar plate shows a strain of *beta* hemolytic enterococcus. Note extreme sensitivity of this organism to ERYTHROCIN—yet it easily resists the other antibiotics. Additional data: A study[1] involving 202 enterococcic strains showed sensitivity to erythromycin in 99.4% of *alpha* hemolytic strains and 94.3% of *beta* hemolytic strains.

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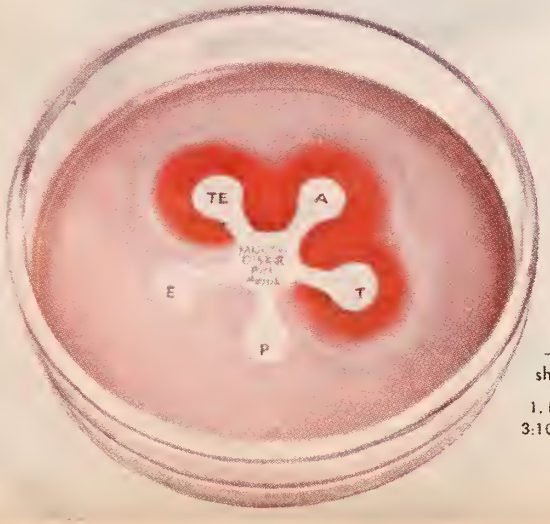
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1. Eisenberg, et al., Antib. & Chemo., 3:1026-1028, Oct., 1953.

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K. pneumoniae (6,500X)



D. pneumoniae (10,000X)



H. influenzae (16,000X)



Aerobacter aerogenes (12,500X)

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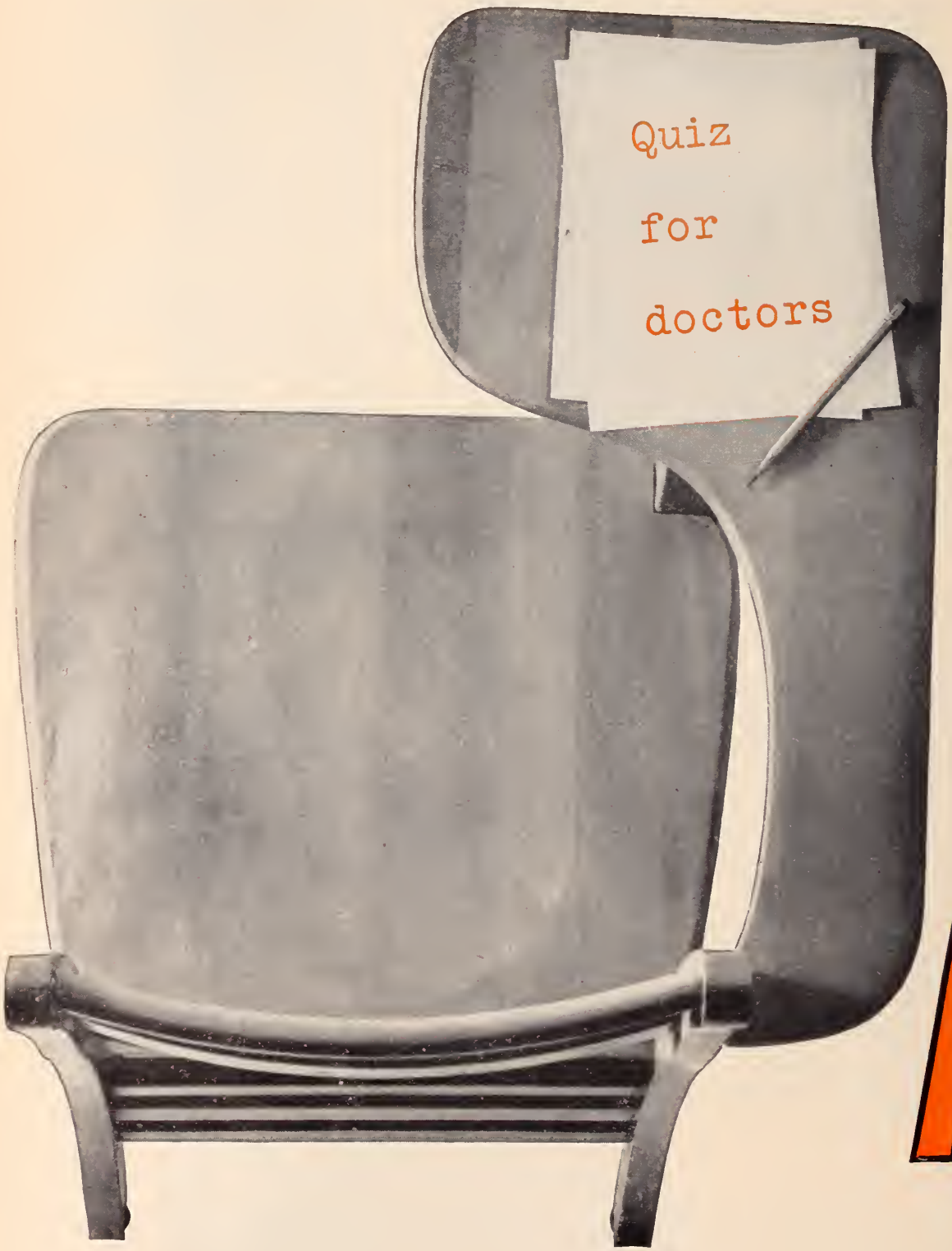
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Ménière's syndrome, cerebral arteriosclerosis, fenestration surgery, streptomycin toxicity



radiation therapy





narcotization



motion sensitivity in every form of travel



effective
control of
nausea
vomiting
vertigo

associated with labyrinthine dysfunction

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Brand of meclizine hydrochloride

Two convenient dosage forms . . . tasteless TABLETS (25 mg.) and mint-flavored, universally acceptable CHEWING TABLETS (25 mg.). Bonamine is ethically promoted. *Trademark

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MODIFIED MILK

Made from Grade A Cow's Milk

Made from Grade A cow's milk (U. S. Public Health Service Milk Code) in which the milk fat has been replaced by coconut oil, destearinated beef fat, and corn oil; with the addition of lactose, dextrins, maltose, dextrose, vitamin A palmitate, activated 7-dehydrocholesterol, ascorbic acid, thiamine, niacinamide, and iron ammonium citrate.

made from grade A milk*

"The first in infant feeding"

This statement is your assurance of the use of high quality, clean milk. Make a habit of looking for it on the label of the milk products which you prescribe for infant feeding.

The quality of the ingredients is reflected in the quality of the final product!

FEEDING DIRECTIONS		
	Baker's	Boiled Water
First 5 days of life	1 part	2 parts
Second 5 days	1 part	1½ parts
After 10th day	1 part	1 part

*U. S. Public Health Service Milk Code

THE BAKER LABORATORIES, INC.

Milk Products Exclusively for the Medical Profession

MAIN OFFICE: CLEVELAND 3, OHIO PLANT: EAST TROY, WISCONSIN

The organisms commonly involved in

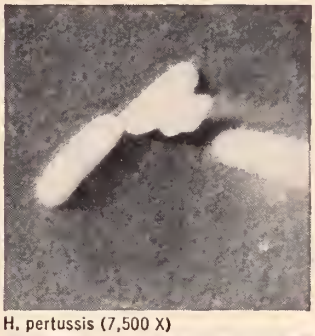
Bronchopneumonia



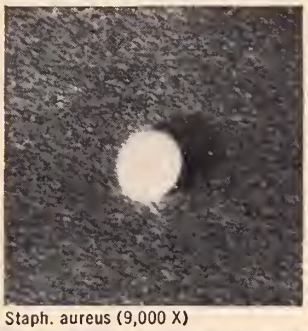
D. pneumoniae (10,000 X)



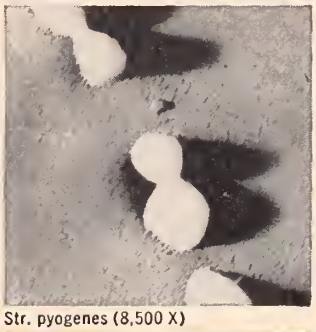
K. pneumoniae (13,000 X)



H. pertussis (7,500 X)



Staph. aureus (9,000 X)



Str. pyogenes (8,500 X)



H. influenzae (16,000 X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

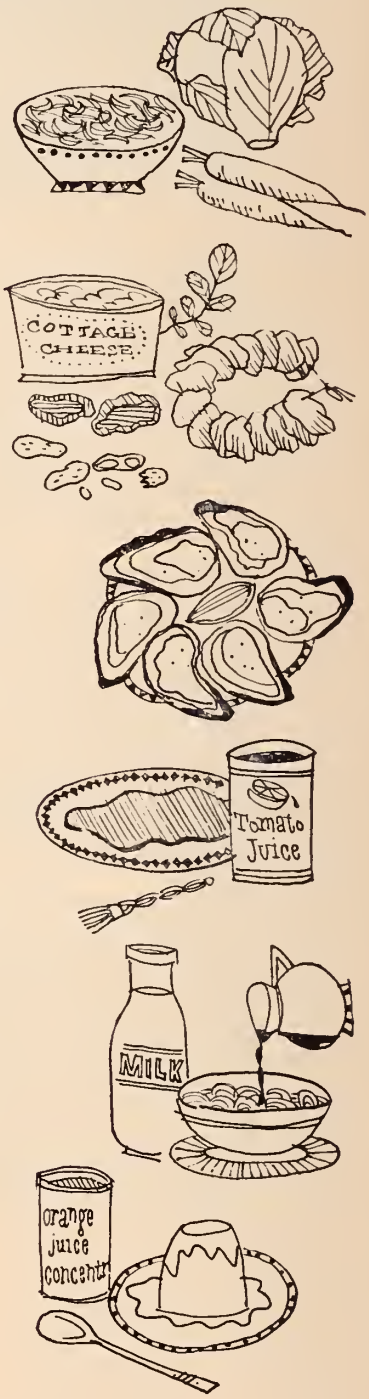
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100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular
100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK. REG. U.S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE

High-Vitamin, High-Mineral Diet the natural way!



Foods high in vitamins and minerals not only give your patient good nutrition naturally, but also may supply vital elements still unknown. These "diet do's" may tempt him to rely more on food than supplements for his vital nutrients.

These foods are best served raw—

Shredded new cabbage and carrot slaw goes nicely with any meal, and combines the benefits of vitamins A and C with some calcium.

Dried apricots and figs stuffed with cottage cheese and peanuts sit prettily in a bed of watercress, and provide calcium, iron, vitamins A, B_2, niacin, and C.

Oysters are exceptionally rich in both iron and calcium and carry a generous amount of vitamins A and D as well.

These good foods can be made even better—

Beef liver ranks high in iron, vitamins A, and B-complex. Brushed with tomato juice an hour before cooking, it turns tender and tasty.

Oatmeal, rich in iron, gets even more and a plus in calcium and vitamin B_6 when served with molasses and milk.

Custard contains calcium and vitamins A, B_1, and B_2. A topping of orange juice concentrate gives your patient a bonus in vitamin C.

Although these "do's" list only the more familiar vitamins and minerals, the trace elements and other micronutrients are no less important. And a varied diet will help your patient get the vital body regulators he needs.

United States Brewers Foundation

Beer—America's Beverage of Moderation

An 8-oz. glass of beer contains 10 mg. calcium, 50 mg. phosphorus, 1/8th minimum daily requirement of niacin, and smaller amounts of other B-complex vitamins. (Average of American beers)

If you'd like reprints of 12 different diets, please write United States Brewers Foundation, 535 Fifth Avenue, New York 17, N. Y.

1950 Cortone® | 1952 Hydrocortone®

1954 'Alflorone' | 1955 'Hydeltra'

DELTRA® tablets

(Prednisone, Merck) 5 mg. - 2.5 mg. - 1 mg. (scored)

the delta-1 analogue of cortisone

Indications:

Rheumatoid arthritis

Bronchial asthma

Inflammatory skin conditions

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The Flavor Remains Stable down to the last tablet.

15¢ Bottle of 24 tablets (2½ grs. each).

We will be pleased to send samples on request.

THE BAYER COMPANY DIVISION

of Sterling Drug Inc.

1450 Broadway, New York 18, N. Y.



for
equanimity[1,2]

Equanil®*

Meprobamate

(2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate)

Usual dosage: 1 tablet, t.i.d.

Supplied: Tablets, 400 mg., bottles of 48.

1. Selling, L.S.: J.A.M.A. 157:1594 (April 30) 1955.
2. Borrus, J.C.: J.A.M.A. 157:1596 (April 30) 1955.

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new anti-anxiety factor with muscle-relaxing properties

relieves tension

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BRAND OF MEPHOBARBITAL

for the hyperexcitability so often found in

hypertension
hyperthyroidism
convulsive disorders
difficult menopause
psychoneurosis
hyperhidrosis

Mebaral's soothing sedative effect is obtained without significantly clouding the patient's mental faculties.

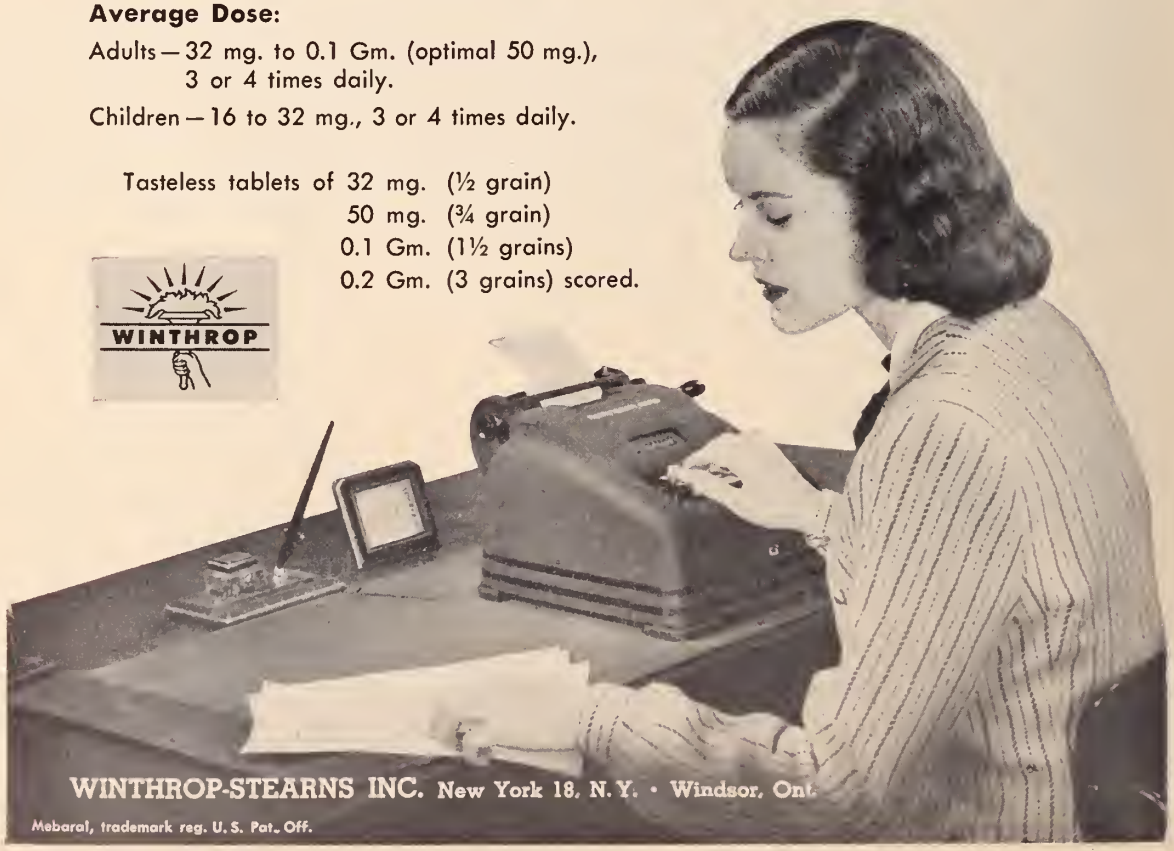
Average Dose:

Adults—32 mg. to 0.1 Gm. (optimal 50 mg.), 3 or 4 times daily.

Children—16 to 32 mg., 3 or 4 times daily.

Tasteless tablets of 32 mg. (½ grain)
50 mg. (¾ grain)
0.1 Gm. (1½ grains)
0.2 Gm. (3 grains) scored.

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you can't help getting a "good picture every time"
when you 1 dial-the-part, 2 set the thickness, 3 take it!



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- Insole extension and wedge at inner corner of heel where support is most needed.
- Speciol Supreme rubber heels ore longer thon most onotomic heels ond mointoin the oppeoronce of normol shoes.
- The potented orch support construction is guoronteed not to breok down.
- Innersoles ore guoronteed not to crock, curl, or collopse. Insuloted by o speciol loyer of Texon which olso cushions firmly ond uniformly.
- Foot-so-Port losts were designed ond the shoe construction engineered with orthopedic odvice.
- NOW AVAILABLE! Men's conductive shoes. N. B. F. U. specifications. For surgeons and operating room personnel.
- By o speciol process, using plostic positive costs of feet, we moke more custom shoes for polio, club feet ond oll types of obnormol feet thon any ather monufocturer.

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"In the Mountains of Meridian"

ROLAND E. TOMS, M. D.
Psychiatrist-in-Chief

Diplomate in Psychiatry of the American Board of Psychiatry and Neurology.

Specialized treatments in mental disorders and alcoholic and drug addictions, including:

Electro-convulsive therapy
Mid-brain stimulation
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A National Institution: We have 13 shipping points throughout the nation and more than 200 representatives with permanent residences in convenient, nearby locations.

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ST LOUIS LOS ANGELES SAN FRANCISCO SEATTLE MINNEAPOLIS
KANSAS CITY DALLAS ATLANTA WASHINGTON, D. C

The organisms commonly involved in

Pyelitis



E. coli (8,000X)



Aerobacter aerogenes (12,500X)



Salmonella paratyphi A (8,000X)



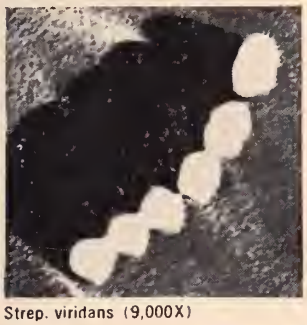
Salmonella paratyphi B (6,500X)



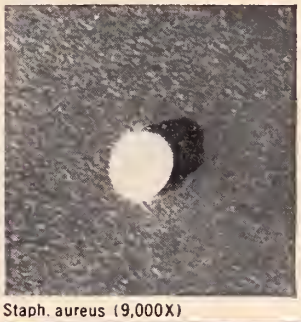
Strep. pyogenes (8,500X)



Strep. faecalis (10,000X)



Strep. viridans (9,000X)



Staph. aureus (9,000X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed)
100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular
100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK, REG. U. S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE

Pork in the Dietary During Pregnancy and Lactation

CERTAIN NUTRIENTS are required in greater than normal amounts during pregnancy and lactation. Pork meat, though its cost is low, supplies a remarkably high quantity of the nutrients required by the maternal organism in these periods of physiologic need.

During pregnancy the maternal organism may store 3.3 to 5.5 pounds of protein in excess of that contributed to fetal tissue.[1] Enough iron is stored to approximate the entire amount secreted in the milk during 9 months of lactation, in addition to the iron supplied to the fetus.[2]

The body of the newborn infant contains approximately 500 grams of protein, 14 grams of phosphorus, and 0.5 gram of iron.[3] It is estimated that the lactating mother, through breast milk, provides a 26 week old infant with about 12 grams of protein, 76 grams of lactose, and 1.2 mg. of iron each day.[2]

Pork meat, an excellent source of high quality protein, thiamine, niacin, and iron,[4] also supplies valuable amounts of other B vitamins, as well as phosphorus, magnesium, and potassium. The thiamine content of pork is particularly important, since there are few more valuable food sources of this vitamin.[4]

Pork and pork sausage—economical, good tasting—are valuable components of the dietary of the pregnant or lactating woman. Just how valuable, is shown in the table below.

1. Toverud, K.U.; Stearns, G., and Macy, I.G.: Maternal Nutrition and Child Health, an Interpretative Review, Washington, D.C., National Research Council, Bull. 123, 1950.

2. McLester, J.S., and Darby, W.J.: Nutrition and Diet in Health and Disease, ed. 6, Philadelphia, W.B. Saunders Company, 1952, p. 241.

3. Marrack, J.R.: Food and Planning, London, Victor Gollancz, Ltd., 1943, p. 67.

4. Wolgamot, I.H., and Fincher, L.J.: Pork Facts for Consumer Education, Washington, D.C., United States Department of Agriculture, AIB No. 109, 1954.

5. Watt, B.K., and Merrill, A.L.: Composition of Foods—Raw, Processed, Prepared, Washington, D.C., United States Department of Agriculture, Agricultural Handbook No. 8, 1950.

6. Bowes, A. deP., and Church, C.F.: Food Values of Portions Commonly Used, ed. 7, Philadelphia, Anna dePlanter Bowes, 1951.

Percentages of Recommended Daily Dietary Allowances* for Pregnant (3rd Trimester) and Lactating Women Provided by 3-Ounce Portions of Cooked Pork Meats and Pork Sausage

	Protein	Iron	Phosphorus	Thiamine	Riboflavin	Niacin	Calories
PREGNANCY (3rd trimester)							
Ham, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.5%	30.0%	10.0%	26.7%	12.5%
Pork Chops, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.3%	47.3%	10.0%	28.7%	10.5%
Pork Sausage, 3 oz., cooked[6]	17.3%	14.0%	9.2%	27.7%	10.1%	18.5%	14.7%
LACTATION							
Ham, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.1%	30.0%	8.0%	26.7%	10.2%
Pork Chops, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.0%	47.3%	8.0%	28.7%	8.6%
Pork Sausage, 3 oz., cooked[6]	13.8%	14.0%	6.9%	27.7%	8.1%	18.5%	12.0%

*Recommended Dietary Allowances, Washington, D. C., National Academy of Sciences—National Research Council, Publication 302, 1953

The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago... Members Throughout the United States

WHY SENSITIZE

in topical and ophthalmic infections

USE 'POLYSPORIN'®

brand

POLYMYXIN B—BACITRACIN OINTMENT

to insure broad-spectrum therapy with minimum allergenicity

For topical use: in ½ oz. and 1 oz. tubes.
For ophthalmic use: in ⅛ oz. tubes.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

There's A Sparkle to A Glass of Wine

—That puts an answering sparkle into the eyes and appetites of your geriatric, post-surgical, sick and convalescent patients.

A glass of Port, Sherry, Burgundy, Rhine Wine—whatever taste pleases your patient—can do wonders to add zest and bouquet to meals, even when appetite is at low ebb.

Aside from these psychobiologic effects of wine, however, there are physiologic effects of wine on the human host, which can also be significant in clinical medicine. A definitive literature on these actions is rapidly accumulating.

The Wine Advisory Board has recently accumulated in a concise brochure the highlights of recent work in this field.

Herein are reported the latest findings on the value of wine as a stimulant to flagging appetite, as an aid to digestion, as a vasodilator, as a daytime and night-time sedative.

We will be glad to send you a copy of "Uses of Wine in Medical Practice" (at no expense, of course). Just write to: Wine Advisory Board, 717 Market Street, San Francisco 3, California.

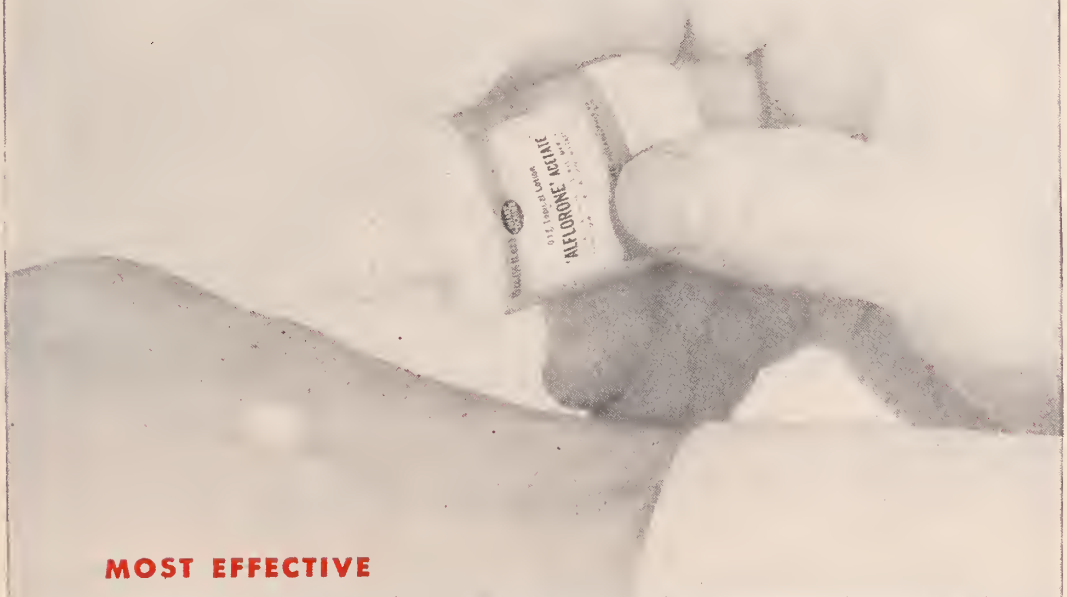
WEIGHT FOR WEIGHT,
THE MOST ACTIVE ANTI-INFLAMMATORY
AGENT YET DEVELOPED
FOR TOPICAL USE

TOPICAL LOTION

'ALFLORONE'

ACETATE

(FLUDROCORTISONE ACETATE, MERCK) 9 ALPHA-FLUOROHYDROCORTISONE ACETATE



MOST EFFECTIVE

Therapeutically active in 1/10th the concentration of hydrocortisone (Compound F).

MOST ECONOMICAL

Superior spreading qualities—a small quantity covers a wide area.

MOST ACCEPTABLE

Most patients prefer the cosmetic advantages of this easy-to-apply, smooth spreading lotion.

Supplied: Topical Lotion Alflorone Acetate: 0.1% and 0.25%, in 15-cc. plastic squeeze bottles. Topical Ointment Alflorone Acetate: 0.1% and 0.25%, 5-Gm., 15-Gm., and 30-Gm. tubes.

SHARP & DOHME

Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

The individualized formula is the foundation of the infant's health and future well being



Karo Syrup...a carbohydrate of choice in "milk modification" for 3 generations

Ideal practice dictates periodic adaptation of the individualized formula to the growing infant rather than the infant to the formula. With Karo, milk and water in the universal prescription, the doctor can readily quantitate the best formula for the infant. A successful infant formula thus lays the foundation for early introduction of semi-solid foods in widening the infant's spectrum of nutrients.

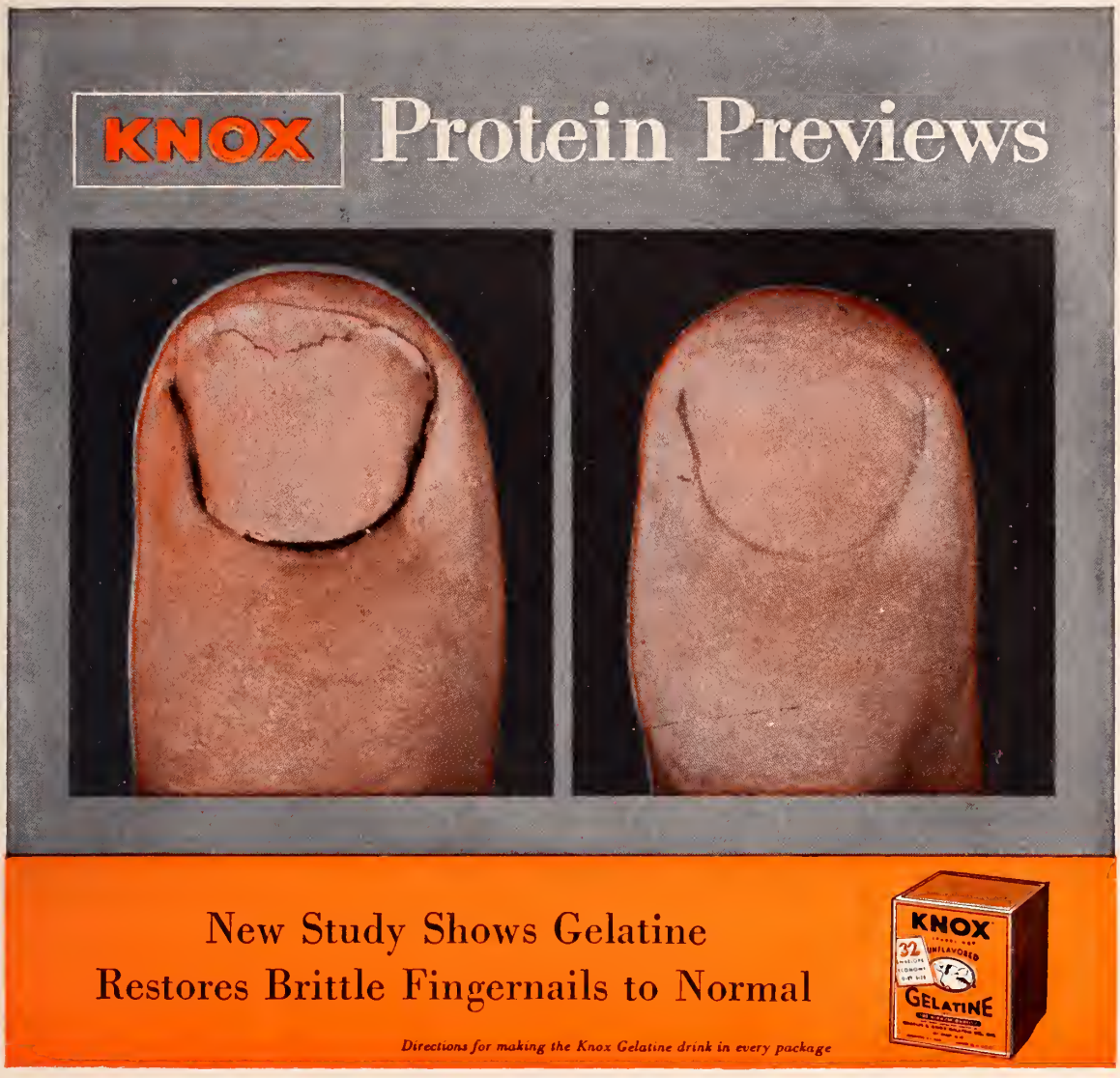
Karo is well tolerated, easily digested, gradually absorbed at spaced intervals and completely utilized. It is a balanced fluid mixture of maltose, dextrins and dextrose readily soluble in fluid whole or evaporated milk. *Precludes* fermentation and irritation. Produces no intestinal or hypoallergenic reactions. Bacteria-free Karo is safe for feeding prematures, newborns, and infants —well and sick.

Light and dark Karo are interchangeable in formulas; both yield 60 calories per tablespoon.



CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

Behind each bottle three generations of world literature



Brittle, fragile or laminating fingernails are the bane of many a woman's existence. Yet this highly prevalent and distressing condition often has gone uncontrolled for lack of effective therapy. Now, you can promise these patients substantial relief in a large percentage of cases.

In a recent study[1] that confirmed previous work[2] Knox Gelatine was used to treat 36 women with fragile, brittle, laminating fingernails. The response was most gratifying. Except for three patients who discontinued the therapy, three diabetics, and two women who had congenital deformities, the splitting ceased and all other patients were able to manicure their nails to a full point by the time the study ended.

Optimal dosage proved to be one envelope (7 grams) of Knox Gelatine administered daily for three months. Improvement, however, was noted after the first month. If you would like more complete details of this work, just use the coupon.

1. Rosenberg, S. and Oster, K. A., "Gelatine in the Treatment of Brittle Nails," *Conn. State Med. J.* 19:171-179, March 1955.
2. Tyson, T. L., *J. Invest. Dermat.* 14:323, May 1950.

Chas. B. Knox Gelatine Company, Inc.
Professional Service Dept. SJ-11
Johnstown, N. Y.

Please send me a reprint of the article by Rosenberg and Oster with illustrated color brochure.

YOUR NAME AND ADDRESS

the drug of choice

. . . as a tranquilizing (ataractic) agent*
in anxiety and tension states
. . . in hypertension

RAUDIXIN

Squibb Whole Root Rauwolfia

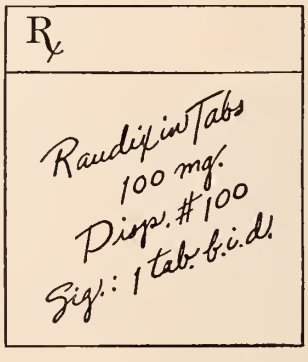
As a tranquilizing agent in office practice, Raudixin produces a calming effect, usually free of lethargy and hangover and without the loss of alertness often associated with barbiturate sedation. It does not significantly lower the blood pressure of normotensive patients.

In hypertension, Raudixin produces a gradual, sustained lowering of blood pressure. In addition, its mild bradycardic effect helps reduce the work load of the heart.

- **Less likely to produce depression**
- **Less likely to produce Parkinson-like symptoms**
- **Causes no liver dysfunction**
- **No serial blood counts necessary during maintenance therapy**

- Raudixin is not habit-forming; the hazard of overdosage is virtually absent. Tolerance and cumulation have not been reported.
- Raudixin supplies the *total* activity of the whole rauwolfia root, accurately standardized by a rigorous series of test methods. The total activity of Raudixin is not accounted for by its reserpine content alone.

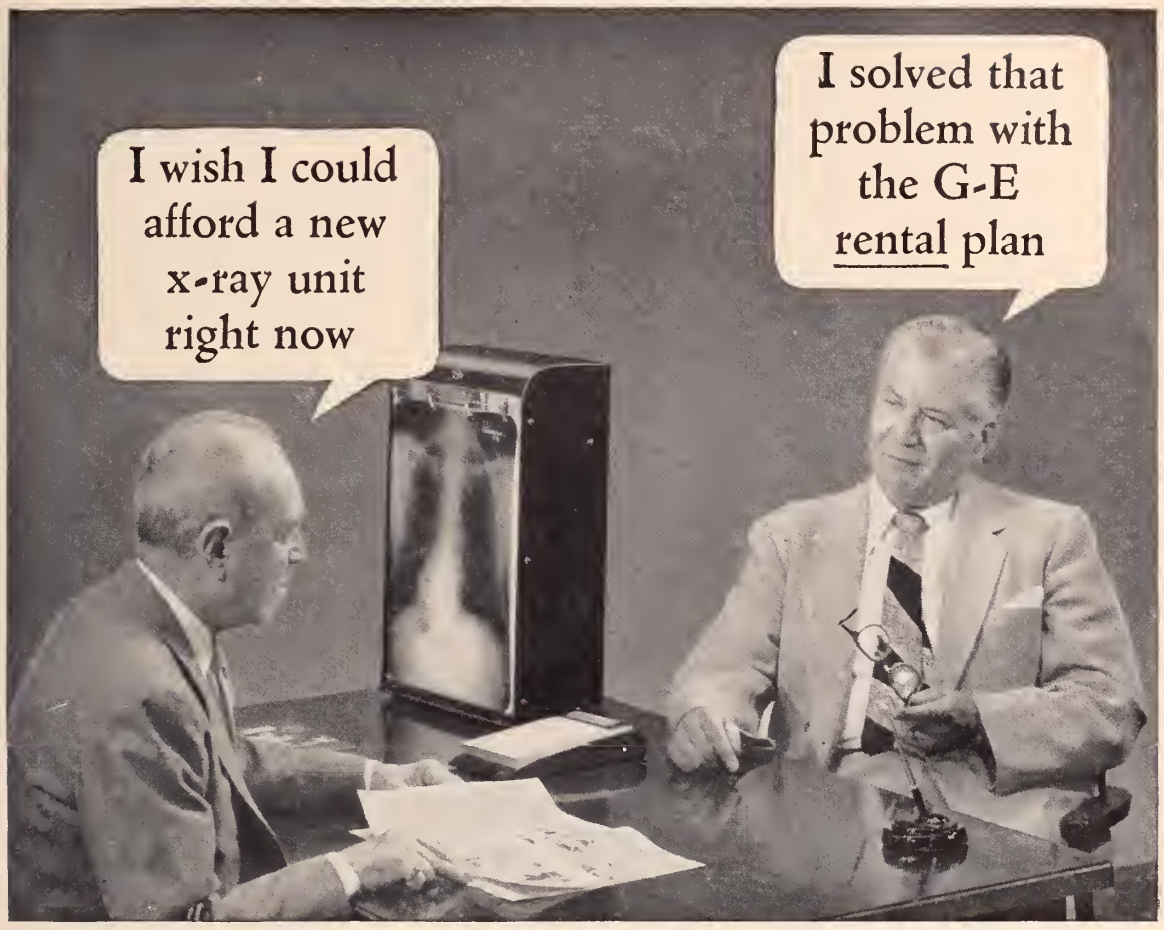
Supply: 50 mg. and 100 mg. tablets, bottles of 100 and 1000.



*Ataractic, from ataraxia: calmness untroubled by mental or emotional excitation. (Use of term suggested by Dr. Howard Fabing at a recent meeting of the American Psychiatric Association.)

SQUIBB

"RAUDIXIN"® IS A SQUIBB TRADEMARK



G-E MAXISERVICE®

gives you the x-ray apparatus you need with no initial capital investment

THIS is the way to bring your x-ray facilities up to date without knocking your budget out of kilter.

The G-E Maxiservice Rental Plan puts modern x-ray apparatus to work for you . . . lets you serve your patients more efficiently with equipment designed for the latest technics. Through periodic replacement feature, you can keep your installation always up to date . . . without "trade-ins."

One monthly rental charge includes repair parts, tubes, maintenance and local property taxes. It can be budgeted as operating expense against income from your installation. Your capital is not tied up in apparatus.

Ask you G-E x-ray representative about the Maxiservice Rental Plan.

Progress Is Our Most Important Product

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unexcelled for nutrient value... safety... convenience...

in infant feeding

- Contains (in normal dilution) about 50 per cent more protein than does human milk.
- Zero tension curds assure ease of digestion.
- Fat content almost one-third lower than that of human milk. Uniform dispersion by homogenization provides ease of fat digestion.
- Less allergenic.
- Mixed carbohydrates allow spaced absorption and easy assimilation.
- Constancy, uniformity, and optimal safety secured by strict laboratory control.

Dextrogen, a most convenient concentrated liquid formula for infants, is made from whole milk modified with dextrins, maltose and dextrose. Fortified with iron and vitamin D, it provides adequate amounts of all necessary nutrients (except vitamin C).

In normal dilution it contains more pyridoxine (vitamin B_6) than does human milk.

Requires no stirring or whipping, no bothersome measuring equipment . . . merely add water, and the formula is ready.

Dextrogen feedings are most economical, too, costing less than a penny per ounce in normal dilution.

The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

THE NESTLÉ COMPANY, INC. • *Professional Products Division* • White Plains, New York

The organisms commonly involved in

Pneumonia



D. pneumoniae (10,000X)



K. pneumoniae (6,500X)



Strep. pyogenes (8,500X)



Staph. aureus (9,000X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed)
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(1) Payne, R. W.; Shetlar, M. R.; Farr, C. H.; Hellbaum, A. A., and Ishmael, W. K.: J. Lab. & Clin. Med. 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: J. Chron. Dis. 1:168, 1955. (3) Halbrook, W. P.: M. Clin. North America 39:405, 1955.

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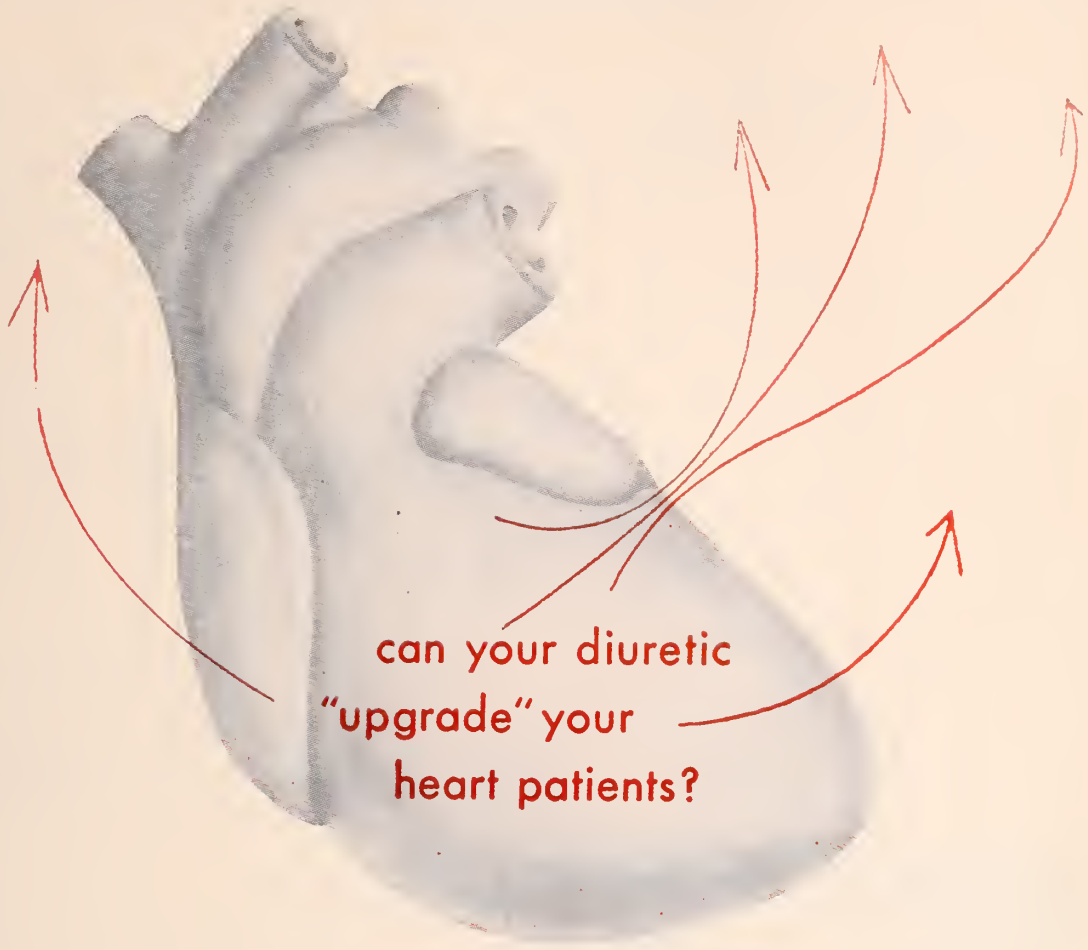
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(1) Clara, M.: Med. Monatsschr. *7*:356, 1953. (2) Brauer, R. W., and Pessotti, R. L.: Science *115*:142, 1952. (3) Schwimmer, D.; Boyd, L. J., and Rubin, S. H.: Bull. New York M. Coll. *16*:102, 1953.

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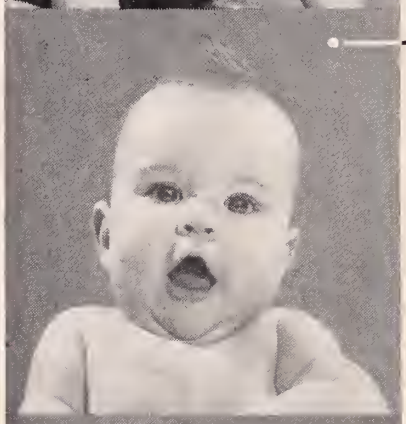
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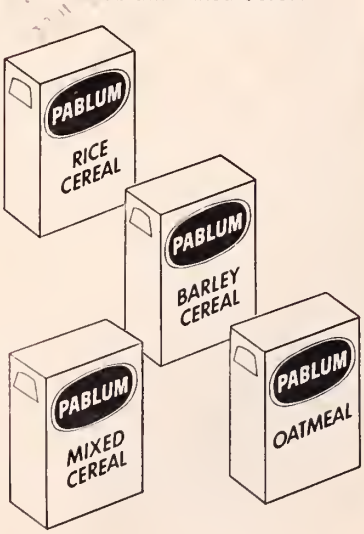


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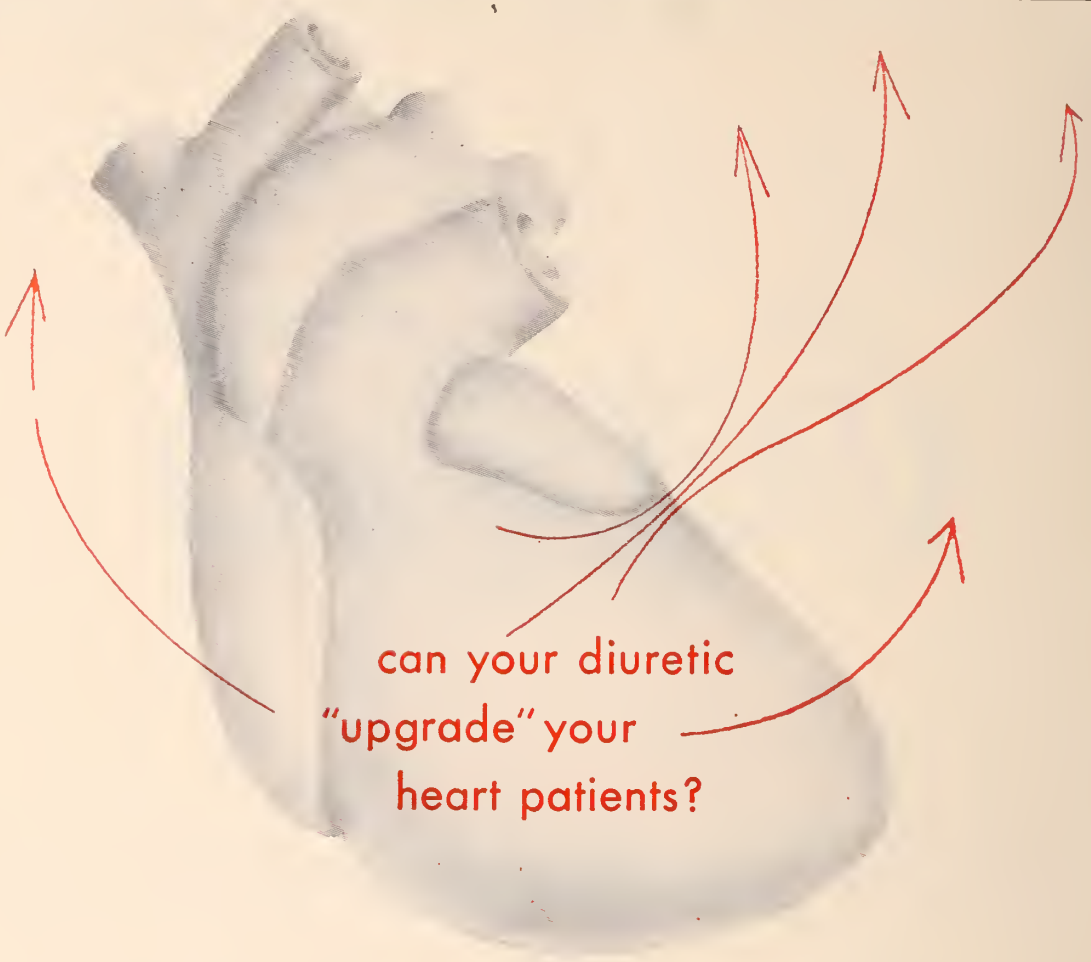
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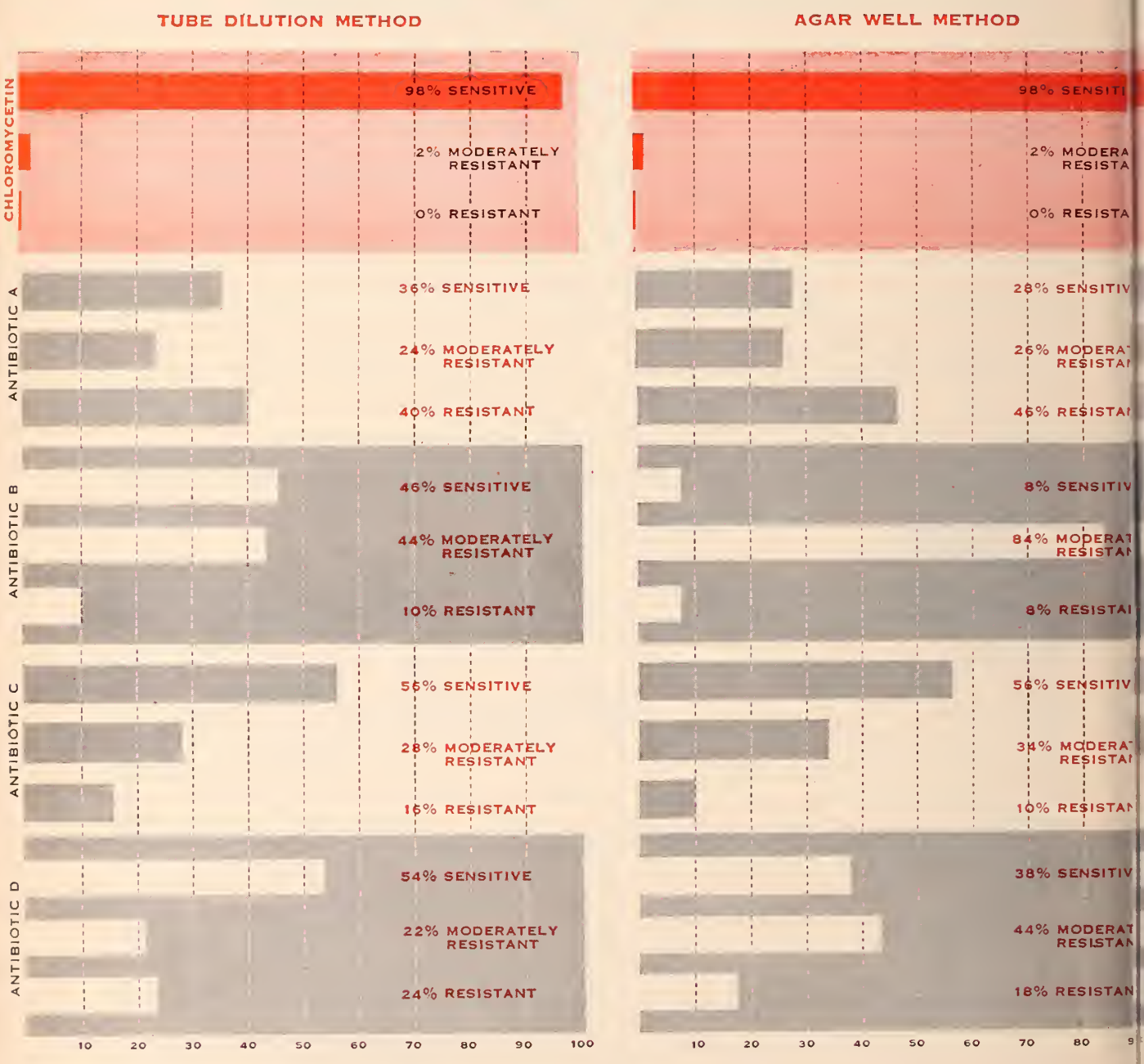
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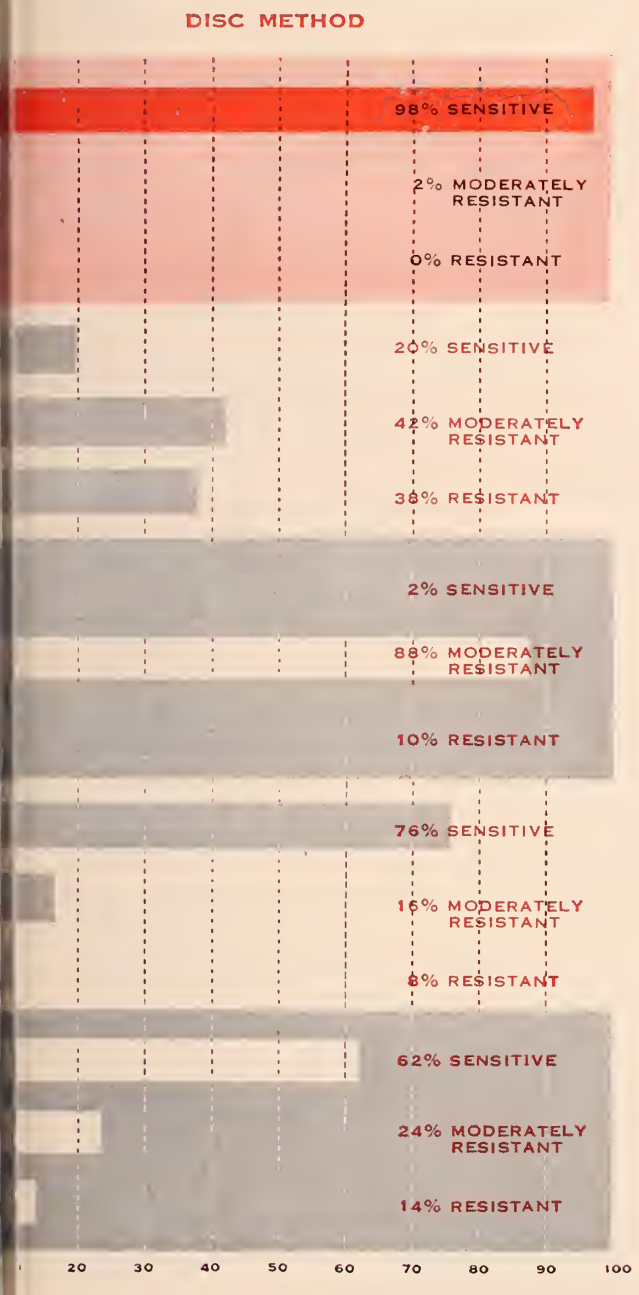
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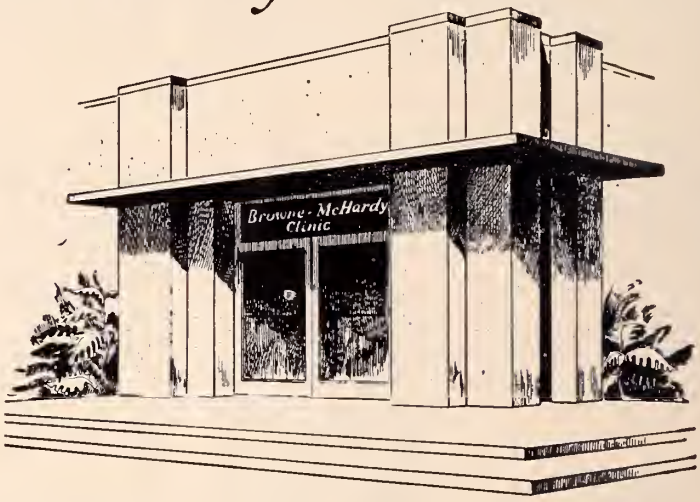
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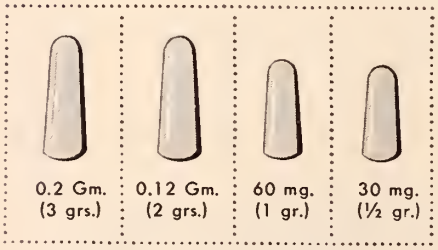
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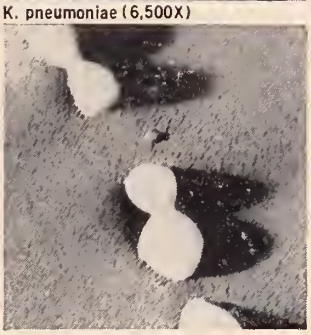
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PATHOLOGY—A VITAL LIVING SCIENCE

Pathologists occasionally encounter the remark from their clinical colleagues that they are not interested in the "living" patient. This is not true because the pathologist has as his principal interest, medical service to "living" patients. This misconception stems from the fact that the specialty of pathology, born over a hundred years ago, began with the performance of post-mortem examination on dead human bodies. Because the information obtained concerning disease was so vital and basic to the practice of medicine in clinicopathologic correlation that pathology in its various forms has emerged today as the cornerstone upon which all good clinical medicine is dependent.

The clinical pathologist is a diagnostician familiar not only with the techniques of laboratory methods, but especially their applications, limitations and interpretations. He is a physician interested in the healing arts and the use of the special methods of his field in the care of the sick. Because he is familiar with the clinical aspects of disease, and the danger inherent in misleading laboratory findings, he is aware of the need for constant control of old methods and the careful evaluation of new ones. He is concerned with the practical value of laboratory tests in the care of the patient and where consulted makes a selection to obtain the most information at the least expense to the patient. His interpretations of biopsy material, based on familiarity and experience with fine differential points, will indicate the need for therapy or eliminate needless treatment. His knowledge of rare entities in his field enables him to advise as to what is to be done. The technique and clinical indication for doing it is the decision of his clinical colleagues.

Pathology is now as much the practice of medicine as any of the clinical branches. For this reason, if the supervision and performance of some of the more skilled parts is done by non-specialized medical persons, this value is correspondingly decreased. Moreover, pathology practice performed by non-medical persons is along the lines suggested by the "do-gooders" in their plan for the socialization of all medicine. The physicians practicing clinical medicine should remember that the pathologist's problems in preventing this are their problems in preserving the highest type of medical practice for the greatest number of patients.

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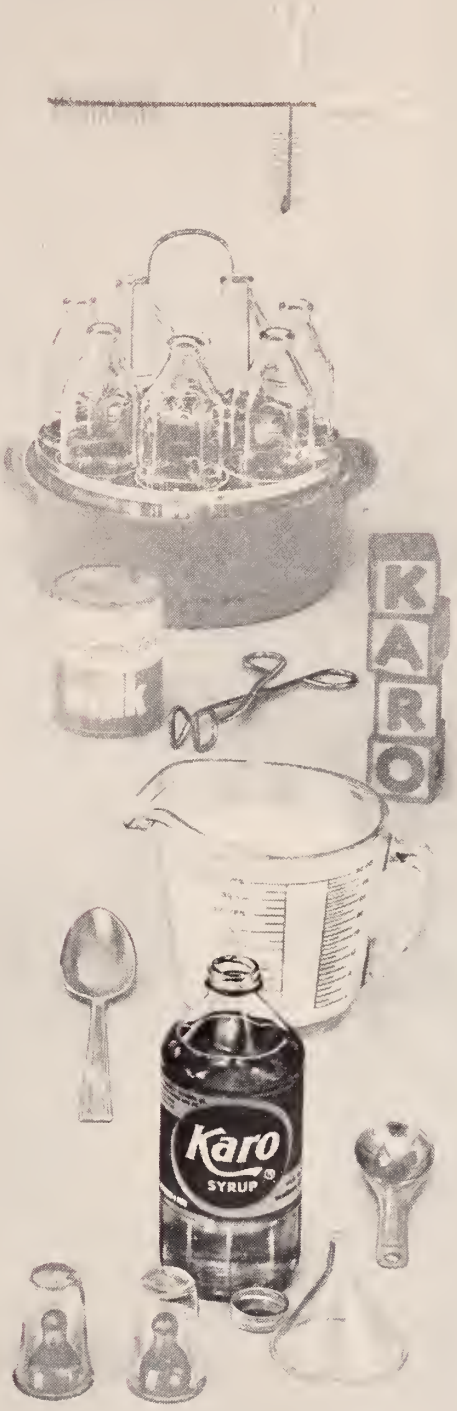
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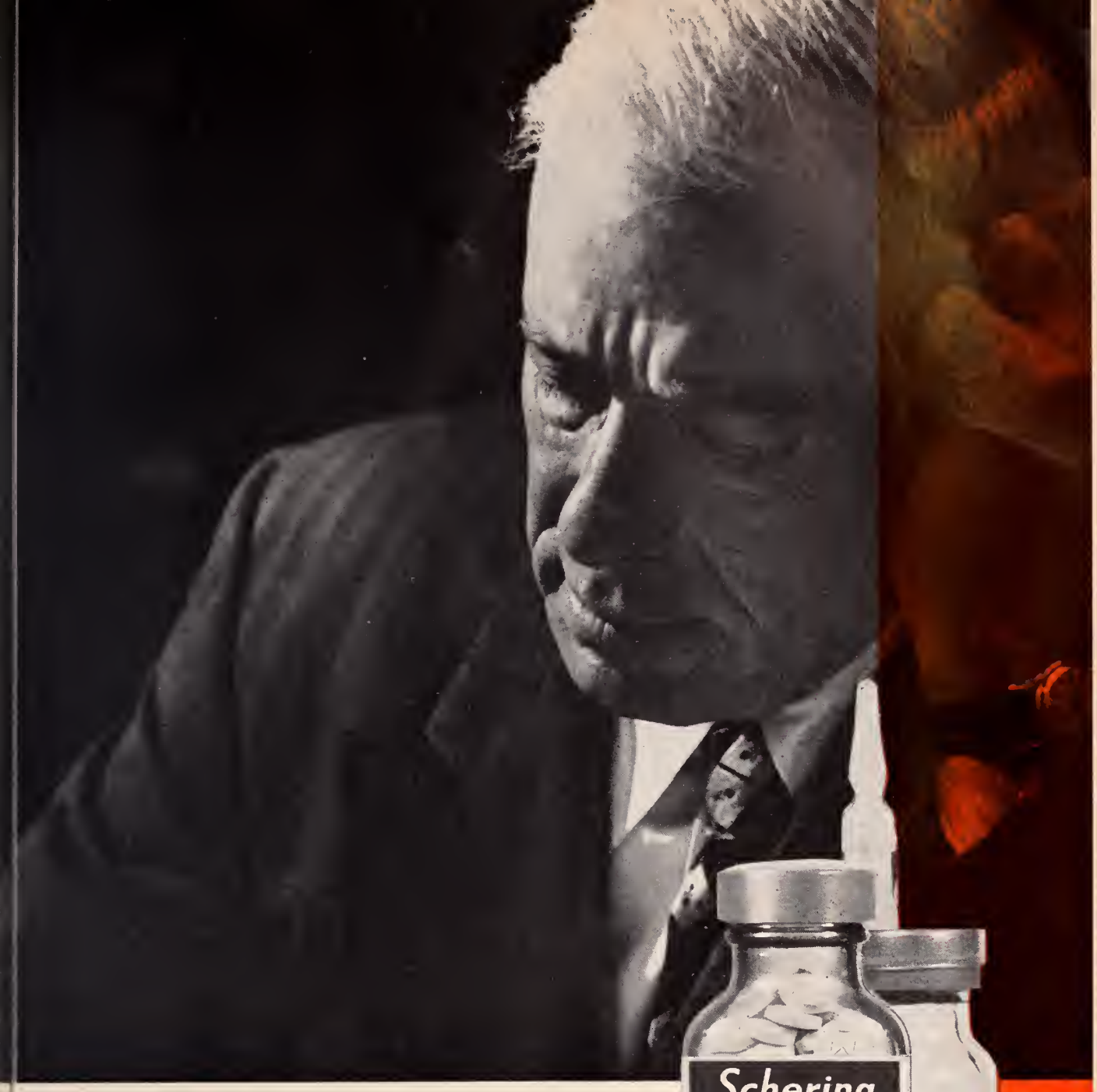
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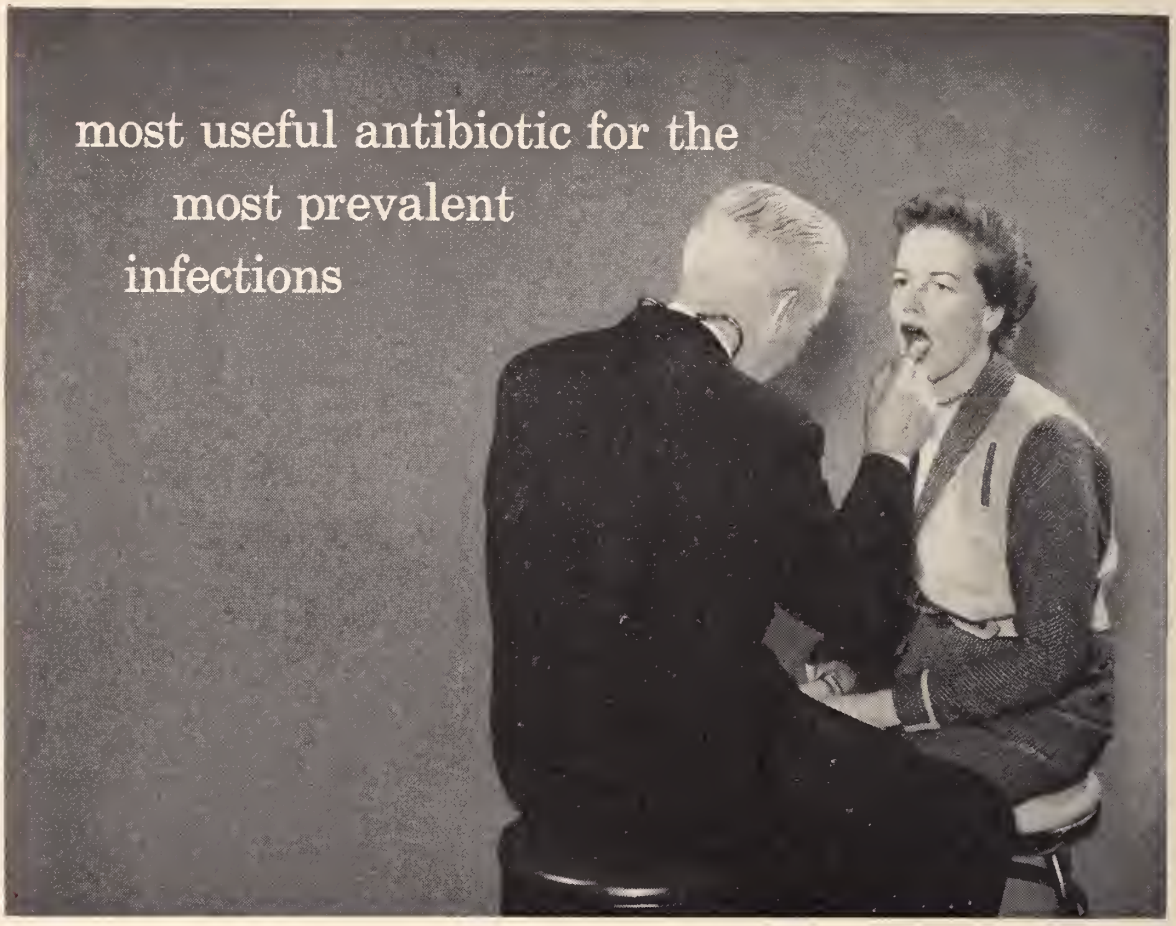
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EMERGENCY MANAGEMENT OF THORACIC TRAUMA *

LAWRENCE H. STRUG, M. D. †
WILLIAM LEON, M. D. †
NEW ORLEANS

Injuries to the chest wall and the contents of the thoracic cage are occurring with increasing frequency in civilian practice. The automobile and other high speed transportation are responsible for this increased incidence. A variety of injuries to the thorax may result in trauma not only to the thoracic cage and pulmonary parenchyma but also to the trachea, bronchi, esophagus, diaphragm, heart and great vessels. Many minor thoracic injuries go unnoticed as they cause little or no disturbance in cardiorespiratory physiology. However, it is not uncommon to see even a relatively minor thoracic injury result in serious alteration in the dynamics of respiration. Severe thoracic injury almost always causes major alteration in cardiorespiratory physiology. It is with this group that we must be concerned. It is obvious that successful management of such cases depends largely on careful evaluation of the injuries. Immediate steps taken to rectify this type of altered physiology can mean the difference between early recovery without complications, a chronic pulmonary invalid, or possible death of the patient. In view of the increasing incidence and the evident lack of knowledge of the immediate management of such injuries, we think that a reiteration of the principles of early management of chest trauma is in order.

In the immediate management of thoracic injuries, one is confronted with (1) the disturbances of cardiorespiratory physiology; (2) shock, which may be neurogenic or due to blood loss; (3) associated injuries; and (4) prevention of infection.

Disturbances in cardiorespiratory physiology are (1) retained bronchial secretions; (2) instability of the chest wall; (3) sucking wounds of the chest (open pneumothorax); (4) tension pneumothorax; (5) hemothorax and (6) cardiac tamponade.

It is essential that all patients with serious injuries of the chest be sent to a hospital as quickly as possible. The patient should be transported in the semi-erect or semi-reclining position lying on the involved side if possible. This serves to splint the injured side, reduce the pain and also may prevent the transbronchial spill of secretions or blood. It is imperative that cardiorespiratory function be restored to near normal as rapidly as possible. Immediate x-rays are not necessary. Tracheal shift, tension pneumothorax or hemothorax can be recognized by clinical means. Sucking wounds of the chest require an occlusive dressing of dry gauze.

In the immediate management of severe

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 4, 1955.

† From the Department of Surgery, Louisiana State University School of Medicine, New Orleans, Louisiana.

thoracic trauma one is confronted with the treatment of shock. The use of blood and plasma in adequate quantities is essential. Narcotics should be used sparingly as they depress the cough reflex.

A patent airway is absolutely necessary in the management of thoracic trauma. It is not uncommon for the patient to have blood as well as excessive secretions accumulate in the tracheobronchial tree. He must be encouraged to breathe deeply and cough. Pain will prevent an effectual cough and must be relieved. Retained secretions can be removed by nasotracheal catheterization or bronchoscopy under topical anesthesia. If this is not sufficient, tracheostomy should be performed. In serious chest injuries, this should frequently be performed as a primary procedure. Tracheostomy in itself has never resulted in the death of a patient, but failure to do so has very often been a causative factor. This method provides direct access to the trachea for the removal of secretion and decreases the respiratory effort by effectively lessening the dead space as suggested by Carter and Guiseffi. In our experience tracheostomy has been of immeasureable benefit in serious chest injuries.

Another essential point in the restoration of normal cardiorespiratory physiology is full re-expansion of the lungs. It is quite common in thoracic injuries for a pneumothorax, or more often a pneumohemothorax to develop. Obviously the collection of fluid and air collapses the lung on the side involved. Immediate aspiration of the fluid and air should be instituted so as to facilitate re-expansion of the lung. Thoracentesis should be repeated at frequent intervals until practically full re-expansion is obtained. Another method of accomplishing the desired result is to insert a catheter through an interspace and connect it to controlled suction. Frequently a dilated stomach may be responsible for the elevation of the diaphragm. A Levin tube inserted into the stomach will deflate it.

Finally, the prophylactic use of antibiotics against pleural infection is advisable.

A simple fracture of a rib can be diagnosed without difficulty by clinical means. Breathing causes severe pain at the fracture site, with radiation along the involved intercostal nerve. Strapping of the chest to alleviate the pain is antiquated as it inhibits full excursion of the chest wall. Intercostal nerve block controls the pain and does not limit respiratory movement. However, one must block the intercostal nerves above and below the fracture site because of the overlapping nerve supply. These blocks should be repeated if necessary, but one nerve block usually is sufficient. Our recent experiences with xylocaine prove it to be a more efficient and longer lasting local anesthetic. It is imperative to follow these patients with x-ray, even in simple rib fractures, because of the possibility of the occurrence of a pneumothorax or hemothorax.

Fracture of the sternum is rare, but when it occurs it is incomplete and seldom shows displacement. Severe blows on the sternum will result in bilateral fracture of the ribs at the costochondral junction, either unilateral or bilateral, causing a parodoxical motion of the sternal plate with resultant serious conseqences. These include pneumothorax, cardiac failure, pericarditis, cardiac tamponade and mediastinal shift. It is necessary to stabilize the sternum by some type of fixation with overhead traction. A number of methods of such traction have been devised and have proved satisfactory. The method which we have used with good results has been to insert three Bigelow screws through the outer plate of the sternum into the inner plate. A malleable bar is then inserted through slots in the head of the screws, and this is attached to overhead traction by a spreader, using 5 to 10 pounds to stabilize the chest. A Backhaus towel clip hooked about the sternum can also be used.

Multiple fractures of the ribs are usually associated with paradoxical motion of that segment. This is usually referred

to as a stove-in or flail chest. This occurs mainly in the antero-lateral plane. The posterior portion of the chest wall is usually well supported by muscles and the scapula, which prevent extreme paradoxical motion. Trauma results in diminished aeration of the lungs, and an increase in bronchial secretions. As the cough is ineffectual the secretions cannot be expectorated. Mediastinal emphysema is a fairly common occurrence in this type of injury, manifested by subcutaneous emphysema of face, neck, and thorax. The chain of events is as follows: There are multiple alveoli which rupture, the air progressing along the interstitial planes to the mediastinum and then into the subcutaneous tissues of the neck. This is a severe chest injury and treatment should be directed toward stabilization of the chest wall and maintenance of a clear airway. Stabilization can be accomplished by applying sand bags to the area of paradoxical movement of the chest. Backhaus clamps applied about a rib and to overhead traction may be used, and lastly, the immediate operative wiring of the ends of the fractured ribs as advocated by Coleman may be carried out. Tracheostomy is particularly valuable in maintaining a clear airway, and if in any doubt, should be performed.

One of the real dangers of trauma to the thorax is the development of air leaks so large as to result in excessive positive pressure within the thorax. This is called a tension pneumothorax. It may consist of air itself or be accompanied by hemorrhage into the pleural cavity. It can be suspected clinically if the patient becomes markedly dyspneic with some degree of cyanosis, and the mediastinum is shifted to the opposite side as evidenced by a palpable shift of the trachea. Percussion of the involved side reveals a hyperresonant note. If air alone is suspected, a needle is inserted into one of the anterior interspaces, usually the second or third, and attached to a closed underwater seal. If one so desires, the tube may be attached to controlled suction. A catheter may be substituted for the needle and it is left in until the lung is fully re-expanded. One must be fully cognizant of the fact that a bilateral pneumothorax may occur or that a contra-coup pneumothorax may exist.

Hemothorax may result from a laceration of the lung or a rupture of an intercostal vessel. Small lacerations of the lung cause little or no concern since the air leak and bleeding soon subside as the laceration is sealed. However, intercostal bleeding can be profuse because of the pressure in the systemic circulation. This type of bleeding is relatively uncommon from nonpenetrating wounds. Aspiration of the blood in the pleural cavity should be immediate, and repeated at twelve to twenty-four hour intervals until the pleural cavity is relatively clear of blood and air and the lung is fully re-expanded. Occasionally multiloculations of fluid occur which make it difficult to aspirate all the blood or air from the pleural cavity. If a clotted hemothorax results, decortication may be necessary to accomplish full re-expansion of the lung. The optimum time for decortication of a clotted hemothorax is usually between four and seven weeks.

PENETRATING WOUNDS OF THE CHEST

Although this type of wound occurred with great frequency during the war, the incidence in civilian practice is sufficiently great to warrant more detailed knowledge of its management.

The treatment of penetrating wounds depends largely on the severity and extent of the damage to the underlying lung. Ice-pick wounds are fairly common and attention is directed to the underlying pulmonary or vascular damage. Knife wounds involving only the chest wall should be cleansed, debrided if necessary, and sutured. Bleeding into the pleural cavity, if profuse and excessive, implies that a large vessel—either pulmonary or systemic—has been injured and demands immediate operative intervention.

High velocity missiles may create wounds of entrance or exit which are relatively negligible, and the chief concern once more is with the underlying damage. Treatment should be directed toward get-

ting the patient out of shock, maintaining an open airway, cleansing, debridement and closure of wounds. The patient should be observed for the possible occurrence of pneumothorax or hemothorax and appropriate treatment undertaken.

Retained missiles over 1.5 cm. in size usually require operative removal. "Sucking wounds" of the chest produced by large missiles may create an open pneumothorax. Occasionally, the opening into the pleural cavity may be plugged by tissue during the expiratory phase of respiration, thereby creating a tension pneumothorax. The sucking wound must be immediately sealed off with a tight dry dressing, the patient's general condition assessed, treatment of shock instituted, a clear airway maintained, and as soon as the condition of the patient warrants, the thoracic wound is surgically treated. This treatment consists of debridement of the wound, repair of the underlying pulmonary damage, re-expansion of the lung, and closure of the wound after an intercostal tube drain is inserted through a dependent interspace. The tube is then connected to an underwater seal or controlled suction.

Abdomino-thoracic wounds may be caused by sharp instruments or missiles and naturally add abdominal complications to those present in the thorax. Abdominal rigidity is commonly found in injuries to the anterior chest wall and it is not uncommon for the abdomen to be entered with the mistaken diagnosis of abdominal injury based purely on the rigidity. However, if the rigidity persists after effective treatment of the chest injury, the possibility of further damage must be considered. Perforation and hemorrhage are the two serious complications to be watched for. Naturally in a large wound allowing free exploration, the abdominal contents should be examined as carefully as the thoracic, and early repair accomplished. This may be done through the thoracic wound completely, or through a separate abdominal incision, or, if necessary, a combined incision.

LUNGS

Injuries to the lungs may occur in either nonpenetrating or penetrating wounds of the chest. It may involve the lung parenchyma, trachea or bronchi. It is extremely rare for major vessels to be damaged in nonpenetrating trauma.

Lacerations of the lung parenchyma are most frequently caused by fractured ribs which may result in a tension pneumothorax or hemothorax. Parenchymal wounds are not usually large and do not bleed excessively unless major pulmonary branches are involved. If fluid and air are aspirated, the lung will very readily undergo full re-expansion. Continued bleeding or persistence of a tension pneumothorax are prime indications for exploratory thoracotomy.

Rupture of the trachea or bronchi may be recognized early in a crushed chest if there is a rapidly increasing mediastinal and subcutaneous emphysema, with or without pneumothorax. Bronchoscopy may confirm the presence of a tear, and if this is the case, early operative repair is the treatment of choice. In these patients with extensive rapidly forming subcutaneous emphysema, mediastinal decompression and tracheostomy should be done.

ESOPHAGUS

Tears of the esophagus can result from spontaneous rupture, which is directly due to sudden increase in intra-esophageal pressure caused by violent vomiting. The symptoms are usually an onset of sudden severe pain in the mediastinum (usually in the lower thoracic region), shock, mediastinal emphysema and left pneumothorax. The treatment is early operative repair of the esophagus through a left thoracic approach with closed intercostal drainage of the pleural cavity. Lacerations of the esophagus caused by sharp foreign bodies, missiles or stab wounds are recognized by air leakage both into pleural cavity and mediastinum. If the leakage of air is minimal, conservative therapy such as antibiotics and gastric intubation may suffice. In large air leaks operative repair is the procedure of choice.

DIAPHRAGM

Compression of the abdomen and lower

chest may often result in an acute rupture of the diaphragm. In view of the serious associated injuries, rupture of the diaphragm is not often suspected or recognized. The fact that an acute rupture can occur must be constantly kept in mind in crush injuries or when an individual has fallen from a height. The left leaf of the diaphragm is much more frequently the site of a tear and this usually occurs transversely at the dome. However, one must be cognizant of the fact that rupture of the right leaf does occur and permits the entrance of a large part of the right lobe of the liver into the pleural cavity. The organs usually found in a traumatic diaphragmatic hernia on the left are colon, stomach, spleen, small intestine and omentum.

In the majority of cases traumatic diaphragmatic herniae do not require emergency operative intervention. However, if severe respiratory embarrassment occurs, it may be necessary to perform an immediate repair.

HEART

Contusions of the heart may be caused by violent compression of the chest, such as steering wheel injuries. This may cause sudden death, because of damage to the coronary vessels. If the patient survives, the contusion may give rise to myocardial insufficiency with corresponding electrocardiographic changes. The treatment is that carried out for myocardial insufficiency from its usual causes. If pericardial tamponade occurs a pericardiocentesis should be carried out.

Wounds of the pericardium and heart are commonly due to stab wounds and missiles. If the patient survives the immediate trauma, cardiac tamponade is to be anticipated. Pallor, cyanosis, distended neck veins, rapid pulse and fall in blood pressure are indications of cardiac tamponade. The heart sounds are distant. If the cardiac wound is a small one, pericardiocentesis alone may be sufficient. However, in larger wounds, immediate exploration of the pericardium is mandatory.

CONCLUSIONS

Serious thoracic trauma is increasing and a clear understanding of the basic principles in the management of chest injuries is necessary. The early re-expansion of the lung and re-establishment of a patent airway are two very important and necessary principles which must be carried out to restore normal cardiorespiratory physiology. In serious cases tracheostomy has proven of inestimable value. It is important that a prompt diagnosis and a careful evaluation and follow-up of the patient be carried out, lest late complications develop and go unrecognized. The recent advances in therapeutic measures and their application has resulted in the saving of lives in what previously had been fatal chest injuries.

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DISCUSSION

Dr. Charles A. Beskin (Baton Rouge): Dr. Strug has covered this broad subject so comprehensively, that there is really little to be added. I thoroughly agree with his concepts, and would like to emphasize one or two points.

Too often, the critical need for restoring immediate cardiorespiratory balance to the victim of an automobile accident with chest injury is overlooked. Emergency tracheotomy can be a most useful, life-saving procedure in cases of multiple rib fractures with severe paradox and ineffective cough. It has been shown that a simple tracheotomy can lower the physiologic "dead space" by over 100 cc. and significantly improve the efficiency of ventilation. At the same time, adequate bronchial toilet can be instituted.

In cases of extensive rib cage mobility due to bilateral fractures and sternal fracture, skeletal traction often is inadequate, and one should not fear operative intervention under endotracheal anaesthesia, and reduction of the individual fractures by suture or intramedullary fixation. Controlled positive pressure breathing by the anaesthetist will often improve the trauma patient with anoxemia and CO_2 retention secondary to an inefficient, paradoxing chest wall.

I was glad to hear Dr. Strug emphasize the harm done by strapping the chest for rib fractures. I have found local intercostal nerve block with either novocaine or nupercaine in oil to be highly effective in controlling pain without embarrassing respiration.

One should be particularly alert to the possibility of bronchial rupture or tear in the ever-common steering post injuries. These cases give

rise to overwhelming tension pneumothorax and mediastinal emphysema, and are usually refractory to simple tube drainage and suction. Immediate thoracotomy is indicated, if such a complication is suspected. Bronchoscopy may be revealing in some cases of bronchial tear.

I would again like to commend Dr. Strug for his informative and lucid presentation.

———o———

WILMS' TUMOR: ITS BEHAVIOR AND PROGNOSIS *

VINCENT P. COLLINS, M. D. †
HOUSTON, TEXAS

CASE HISTORY

In July of 1953, 4½ year old Jimmie was admitted to hospital one week after his mother had noted an abdominal mass. He had been complaining of abdominal pain for one month and there had been some weight loss over a period of three months. The tumor filled the right side of the abdomen and x-ray studies confirmed its renal origin (Fig. 1). In a

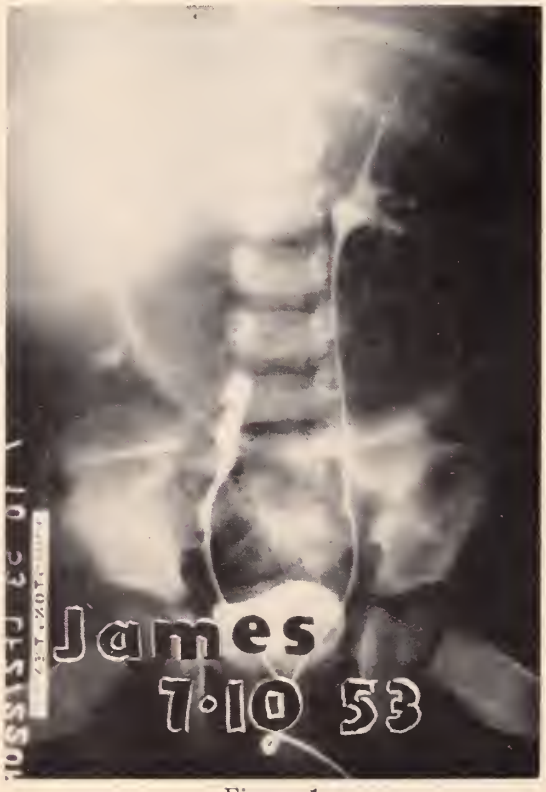


Figure 1

radiograph of the chest, the right hilar shadow was rounded and slightly enlarged. A metastatic lesion was considered but could not be confirmed. Because of the size of the mass, preoperative radiation was carried out (1580r tumor dose through opposing 10 by 15 cm. fields in nine days). The mass diminished in size during treatment and on July 29, 1953, the right kidney was removed. As far as could be determined, the local lesion was completely removed: there were no evident metastases. The kidney contained a 6.5 cm. tumor and the histologic diagnosis was Wilms' tumor. The child's progress after operation was satisfactory. His clinic visits were uneventful. The questionable pulmonary lesion did not change.

In October 1954, the mother brought 3 year old Frank to hospital with a story of bloody urine for four days. A discrete mass was palpable in the right flank. Roentgen studies disclosed a mass in the lower pole of right kidney (Fig. 2). A



Figure 2

right nephrectomy was done on October 27, 1954. The tumor was cleanly removed and no metastases were encountered. The

* Presented at the Seventy-fifth Annual Meeting of The Louisiana State Medical Society, New Orleans, May 4, 1955.

† Professor of Radiology, Baylor University College of Medicine, Houston.

kidney contained a circumscribed 4 cm. tumor and the pathologist's diagnosis was Wilms' tumor. Postoperative radiotherapy was given to the operative site (2500r tumor dose through opposing 6 by 8 cm. fields in twelve days). The child was returned to his family in good condition.

With the recognition of the second tumor in this family, a carefully casual inquiry was made of other children. There were three and the mother was invited to bring them in to hospital for examination when Jimmie and Frankie returned for follow-up in November.

Leon, age 10 (Fig. 3), was clinically well but an intravenous pyelogram showed a deformity of the uppermost calyx of the right kidney.



Figure 3

Carl, age 8 (Fig. 4), had no signs or symptoms but an intravenous pyelogram showed questionable displacement of the uppermost calyx of the left kidney.

John, age 21 months (Fig. 5), showed no abnormality on physical or x-ray examination.

James, whose tumor was removed six-



Figure 4



Figure 5

teen months before, now had a definite pulmonary metastasis.

Frank, whose tumor was removed in October, remained free of evident disease.

The overwhelming cancer problem in this family required management with sympathetic caution. James' pulmonary

metastases were treated by radiotherapy (1500r tumor dose to both lung fields through opposing 10 by 15 cm. fields in twenty-one days). The metastatic lesions disappeared but massive recurrence in chest, mediastinum and abdomen developed and he died in February 1955.

After Jimmie's death all children were re-examined.

Frank showed no sign of recurrent or metastatic diseases.

Baby John had no identifiable disease.

Leon and Carl were thoroughly restudied with retrograde pyelography and retroperitoneal air studies. The findings were unchanged. Despite the deformities shown, a renal mass could not be proven. An aggressive approach to diagnosis immediately was not favored by any consultant.

The entire problem of Wilms' tumor as well as the care of this family was a subject for thoughtful appraisal.

Wilms [8] described the tumor that bears his name in 1899. It is sometimes called mixed tumor and adenomyosarcoma, because of its varied histologic components, glandular elements, spindle cells, and smooth and striated muscle cells. It is also termed embryoma because some at least have had to originate in utero. On embryologic grounds Nicholson [6] places the time of origin within the period of the third to ninth month of pregnancy.

It is the commonest tumor of early childhood. The peak incidence is between three and four years and 90 per cent are diagnosed between the ages of four months and eight years (Fig. 6). There

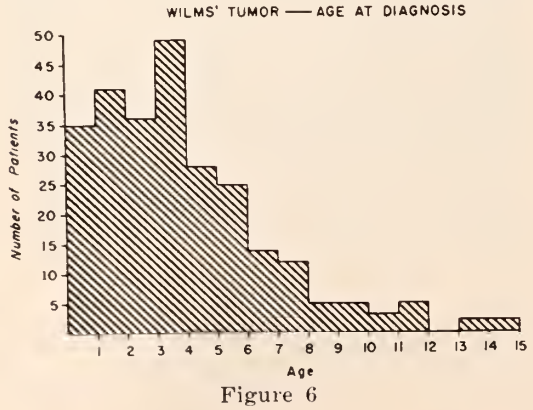


Figure 6

are isolated case reports of Wilms' tumor in adults including one aged 75 years.[7] Because of its deeply located site, it commonly reaches a size of 5 to 10 cm. in diameter before diagnosis. This growth is asymptomatic and the most frequent story is that the parent discovers the mass while bathing or dressing the child. Polycystic kidney and horseshoe kidney are the other likely causes of a palpable kidney at this age. The hypernephroma is a renal tumor of adults with a peak incidence between 50 and 60 years of age.

There are several reports of tumor occurring in siblings. Maslow [5] reported an instance of three proven and one probable Wilms' tumor in one family, all of which ended fatally. Involvement of both kidneys in the same child also occurs. Every reasonable effort must be made to determine that the other kidney is free of tumor before removing the obviously involved one.

There is little delay in seeking medical attention once an abdominal mass is discovered and it is a present custom to consider treatment as a surgical emergency. This is the view of Gross [3] of Boston Children's Hospital where they have evaluated a number of approaches to therapy, surgery alone, radiotherapy followed by surgery and surgery with postoperative radiation. Their choice of treatment methods is immediate surgery on admission to hospital with the first radiotherapy administered postoperatively before the child recovers from anesthesia. The improving therapeutic results are shown in Table 1.

TABLE 1

Date	Patients	Survivals
1914-1930	27	14.9%
1931-1939	31	32.2%
1940-1947	38	47.3%

These figures were first presented in 1949 [4] and again in 1953 [3] with no change in the percentage of survivals. They attribute the improved survival rate in the second group to reduced postoperative deaths, and in the most recent group to better application of postoperative radiation.

Guidance was sought in this knowledge

of Wilms' tumor that would apply to the management and care of the members of this susceptible family. The known factors involved in achieving cure are diagnosis, surgery, and radiation. The role of each should be closely examined.

Early diagnosis is the starting point of every effort to achieve cure of cancer. In the children under consideration there might be opportunity to establish diagnosis long before the time when tumor, if present, would eventually manifest itself by a presenting mass. Though the clinical suspicion existed and was reinforced by borderline abnormalities in x-ray examination of the kidneys, the presence of the tumor could not be identified with certainty. Exploratory operation was entertained as the only method of establishing diagnosis if tumor was too small to be detected by clinical or x-ray examination. It was necessary to consider the reaction of parents and children to further operations, to weigh the risk of operative mortality, of damage to a normal kidney, and the possibility that a negative or indeterminate finding would be the result of exploration. These might all be held unimportant if death were the certain outcome of failure to. intervene, and cure was the probable result of surgical removal.

In the case of the two older children, aged eight and ten years, who would be candidates for surgical exploration, diagnosis of the tumor, however small, could not be considered early if it had been present since before birth. Accepting the prenatal origin, a tumor, if present in either of these children, had evidently grown more slowly than had the tumors of the younger brothers which had reached the size of clinical recognition at the ages of three and four and a half years. There was no available information to indicate the significance of rate of growth in determining prognosis or influencing treatment.

Treatment in the hands of Gross [3] had been reported as increasingly effective and it would be the aim of care for this family to take every advantage of the factors involved. The improvement in results for the period of 1931-1939 is ascribed to diminished operative mortality. Improvement in surgical facilities, anesthesia and supportive procedures, continued through the third period to 1947 but the impressive cure rate of 47.3 per cent was ascribed to postoperative radiation to the operative site. This would imply that the patients were now being saved who formerly died of recurrence of disease incompletely removed from the kidney bed at the time of operation. It also implied that the disease tends to remain localized prior to the time of diagnosis and treatment, but is prone to recur locally in the postoperative period and then set about its fatal course unless eradicated by radiation.

Surgical success or failure must be analyzed separately. A patient is clinically free of disease at any given period after operation for either of two reasons.

1. The tumor was totally removed at operation. This is possible only because the tumor remained localized to the surgically removed specimen.

2. The tumor is so slowly growing that sufficient time has not elapsed to permit it to grow to size of clinical recognition.

Both of these reasons are the result of a growth characteristic of the individual tumor. The number of patients free of disease is properly a measure of the proportion of tumors which grow locally or slowly, rather than a measure of the efficacy of treatment.

Recurrent disease indicates that total removal of disease was not achieved by surgery. For this there are two possible explanations.

1. Tumor had metastasized to distant sites before operation. This is a growth characteristic of the individual tumor that is beyond the control of present forms of treatment.

2. Tumor was locally incompletely removed. This is the sole area for improvement in results. Knowledge of the frequency of this circumstance of purely local persistence is lacking.

The known and observable effect of

radiation is demonstrated in the case history of Jimmy. The primary tumor showed a marked shrinkage under treatment and the pulmonary metastases showed temporary regression. Although these effects may have limited usefulness, radiation can be offered for these specific purposes. The effectiveness of postoperative radiotherapy in obtaining cure after incomplete surgical removal rests on the hopeful assumption that:

1. In an appreciable number of patients there are residual tumor cells in the operative field but none have escaped beyond the field to be radiated.

2. Radiation can completely eradicate such residual cells so that they neither grow locally nor metastasize.

While continuing to offer postoperative radiation on this basis, evidence must be sought to establish the validity of either assumption.

The factors governing the outcome for the patient with Wilms' tumor were still obscure and an investigation of published and unpublished material continued until some 252 cases had been studied.[1]

If one accepts the prenatal origin of this tumor as occurring within a fixed period of embryonic development, then the time of recognition and diagnosis would depend upon the rate of growth. The most rapidly growing tumors would be identified at birth. An average rate of growth would be shown by the tumors appearing in the period of peak incidence between the third and fourth years. More slowly growing tumors would appear later in childhood or even in adult life.

If the rate of growth was characteristic of an individual tumor, then this would govern not only the time of first appearance of the primary tumor but it would also place limits upon the length of time in which a recurrence might be expected to develop. A tumor present at birth had to develop to clinically recognizable size in a period of nine months or less. If it were to recur following surgical removal, then this should require no longer than an additional nine months. A tumor first recognized at the age of five years and incompletely removed should again reach the size of clinical recognition either as recurrence at the primary site or as a distant metastasis in a period not to exceed five years plus nine months.

The records of 206 patients gave information concerning the patient's age at the time of operation and the age at the time of last negative follow-up, recurrence or death. A period of risk was postulated for every patient which was equal to the age at the time of operation plus nine months. Within this postoperative interval, patients were at risk of recurrence. If they lived beyond this period without evidence of recurrent tumor, they might be considered cured (Fig. 7). Of the 206

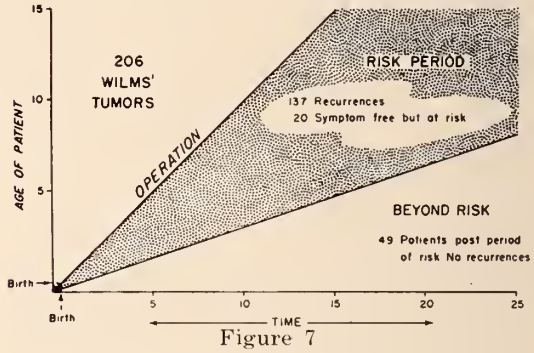


Figure 7

patients studied, there were 137 recurrences or deaths, all of which recurred within the period of risk. There were 20 patients within the period of risk who were symptom free. There were 49 patients who had lived beyond the period of risk. No instance of recurrence was encountered beyond the predicted period of risk.

The significance of these observations is twofold. It tends to confirm the proposal that the rate of growth is a characteristic of an individual tumor and that this governs the time of appearance of the primary lesion and sets a limit upon the time of recurrence if such is to develop. It also offers a new method of estimating the prognosis in a given patient. Whereas statistical methods which accurately determine survival rate predict the outcome for a group of individuals, this is a method of prediction applicable to the individual. While it cannot predict

cure or failure at the time of diagnosis, it does predict a time limit on the risk of recurrence.

In this respect a recent report by Falkinburg[2] is of particular interest. This was a patient in whom Wilms' tumor recurred eight years after operation. From personal communication it was established that the patient was 7 years and 8 months old at the time of the first operation; recurrence was noted eight years and three months later at the age of 15 years and 11 months. The recurrence was just within the predicted limit which would have expired at 16 years and 1 month.

There is an increasing awareness that arbitrary periods such as five years as a measure of survival are of doubtful value. In the case of Wilms' tumor a five year interval of observation is neither necessary nor useful in establishing the outcome. A shorter interval will suffice for younger patients, a longer interval is necessary for older children before declaring them free of risk of recurrence. Without a consideration of age of the patients comprising the series reported by Gross[3] it is not possible to determine the influence of treatment in producing a five year survival of 47.3 per cent.

Gross[3] states that in his series of 96 patients, only 2 recurrences developed later than nine months after treatment. In the 206 patients reviewed in this study, the records did not always distinguish between the time of recurrence and the time of death. Of 137 recurrences or deaths, 51 occurred nine months or more after operation. Of 38 dated recurrences, 16 were known to have occurred nine months or more after operation. This appears to indicate some undetermined difference in the material of Gross' series.

As a result of this study, our current appraisal of Wilms' tumor is that it is prenatal in origin. The time of appearance of the primary tumor is governed by the growth rate so that rapidly growing tumors appear at birth or shortly after, and a few very slowly growing tumors occur on into adult life. The growth rate of a given tumor is a characteristic of that tumor and governs the time of recurrence if cure is not achieved. Following operation the patient is at risk of recurrence for a maximum period equal to his age at the time of operation plus nine months. If recurrence does not develop in this interval, the patient may be considered cured. Younger patients may be declared free of risk of recurrence at an earlier age than may older patients.

The outcome of treatment is determined by another growth characteristic of the individual tumor, that of continued growth as a localized mass without shedding metastases to distant sites. In the series studied, 49 of 206 passed the predicted period of risk to give a cure rate of 25 per cent by this method of analysis. This means that about one quarter of Wilms' tumors grow to size of clinical recognition without establishing metastases. Taking into account the duration of tumor, the rate of growth, and the volume of tumor achieved in the period of silent development, it is felt that if the individual tumor has the ability to metastasize, this ability is likely to be exercised before diagnosis. Metastasis is unlikely to be the final act of a long established tumor during the immediate preoperative period.

Surgery is not viewed as an emergency procedure if such action jeopardizes the thoughtful preparation of the patient or the family. The most distinct advance in treatment has been the diminished operative mortality and this must be maintained.

The effect of radiation is demonstrable only on gross tumor. Its usefulness and limitations in the management of advanced disease are not questioned. It is useful in diminishing the size of a bulky primary tumor. The argument against preoperative radiation deplores the delay in surgical removal but this is short relative to the total duration of the tumor. The argument for preoperative radiation is that the risk of metastases is lessened if the diminished bulk of tumor can be removed with minimum manipulation. If either has merit they are judged equal risks and convenience is the guide. Post-

operative radiation is continued as a standard procedure because on hypothetical grounds control of persistent localized disease is the only avenue of possible improvement in current results. Material is being re-examined to determine the frequency of recurrence in the operative site and whether this is lessened in the group of patients receiving postoperative radiation.

Application of this appraisal to the problem of the family under discussion leads to this attitude on treatment and management.

In the case of Jimmy, the tumor was of moderate growth rate and had the ability to establish distant metastases. These growth characteristics determined the ultimate outcome long before diagnosis. Treatment could not effect cure but it probably delayed death by some months.

Frank's tumor had a very slightly faster rate of growth. Whether it was capable of establishing distant metastases has not been established. Born on October 19, 1951, and operated on October 27, 1954 at the age of 36 months, he is at risk of recurrence until the age of 81 months (36 + 36 + 9). If no sign of local recurrence or distant metastases is evident at that time, he may be considered cured.

Eight year old Carl and ten year old Leon are under troubled supervision because of questionable calyceal deformities. If either has a Wilms' tumor it is in the group of slower growth rates. Whether there is a relation between rate of growth and ability to metastasize is not established but if ability exists there have been many years for metastases to have occurred. If metastases have not occurred with this long opportunity, it seems likely that this favorable growth characteristic will continue to govern behavior.

Baby John has no sign to suggest the presence of a renal tumor, but he is young enough to harbor an occult tumor with a growth rate slightly more rapid than average.

These three children should be followed at intervals of three months for the youngest, and six months to one year for the older brothers. The period may be increased with age because no change could be detected in very slowly growing tumors in short intervals of time.

Although the record of this family is incomplete the considerations governing a current problem are somewhat different than retrospective analysis. The report may therefore be of value in management of other patients in whom the outcome is not yet clear.

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PELVIC MASSES OBSTRUCTING VAGINAL DELIVERY *

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The discussion of pelvic masses that may obstruct vaginal delivery must, of necessity, include those which do not absolutely preclude vaginal delivery, some of which are amenable to correction by minor procedures, as well as those that prohibit normal termination. In addition, we should recognize the lesions which, after major surgery, allow the vaginal route to be exercised.

In order to facilitate classification, these masses have been subdivided into four main categories, namely: (1) vulvovaginal, (2) uterine, (3) ovarian, and (4) extragenital.

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CATEGORY I. VULVOVAGINAL

Inflammatory vulvovaginal lesions will, on occasions, produce obstruction to the vaginal passage. In 1947, Kaiser and King[1] reviewed 38 labors in 26 patients with lymphopathia venereum, in which abdominal delivery became necessary in 3 due to extensive scarring of the recto-vaginal septum.

Bartholin abscess may produce a tumor large enough to be disturbing but should be readily amenable to incision and drainage and antibiotic therapy, care being taken to prevent contamination of the uterus.

Luetic gummatous lesions may, as well, occur in the vulvar region. However, their initial appearance concomitant with the onset of labor would be extremely unusual and they should readily subside with antisyphilitic treatment if discovered prenatally.

Vaginal cysts, in the vast majority of instances, are small and of no concern although occasionally one may encounter a cyst of mullerian or wolffian origin that creates a hazard. Aspiration of these cysts may be easily accomplished with removal at a later date after the puerperium and complete involution has been experienced. Probably the most common tumor of this type one might expect to occur would be a Gartner duct cyst in the anterolateral vaginal wall.

Solid benign vulvovaginal tumors such as fibromata, fibromyomata and lipomata may occasionally attain a size of such proportions as to cause dystocia but local removal should satisfactorily overcome this.

Carcinoma of the vulva, fortunately, is usually a disease of elderly women, but should it be encountered during early pregnancy treatment, as in other cases of vulvar cancer, that is, radical vulvectomy, should be undertaken. If the patient is at term or in labor, cesarean section should be done with vulvectomy at a later date.

Primary carcinoma of the vagina, a rare lesion of poor prognosis, if diagnosed during early pregnancy before the fetus is viable would present a complex problem in that, to be effective, treatment should include radium, x-ray therapy, and radical surgery, with obvious fetal loss. Near or at term, a decision is not so involved in its consequences, an elective cesarean section being indicated followed later by definitive treatment for the malignancy.

CATEGORY II. UTERINE

In discussing uterine masses obstructing vaginal delivery, leiomyomata, or uterine fibroids, are the most common tumors present. Duckering and associates[2] in a review of 22,283 pregnancies from 1937 to 1943, at New York Hospital, discovered 361 cases of pregnancy associated with myoma uteri of significant size (6 cm. or more) for an incidence of 1.4 per cent. These figures must necessarily vary according to the type of patients seen, a predominance of colored clientele such as is found at Charity Hospital causing an increase in the percentage rate due to their predilection to the development of myomata.

It is extremely desirable to evaluate the size and position of fibroids prior to pregnancy or as early in pregnancy as possible. At a later date confusion due to fetal parts may complicate the diagnosis. It is also well to bear in mind that these tumors may enlarge or undergo degeneration during pregnancy.

The majority of pregnant women with uterine fibroids will go to term and deliver vaginally. If it is thought that the fibroid occupies a position and is of such size as to impinge on the pelvic passage, an attempt should be made to gently elevate the myoma from its location within the pelvis. Many will spontaneuosly retract and allow the presenting part to descend. It may be noted here that abnormal positions and presentation of the fetus are common in the presence of uterine fibroids.

Should the fibroid be incarcerated in the pelvis and absolutely impede the progress of labor, a cesarean section is the procedure of choice.

It is not within the scope of this paper to evaluate the removal of fibroids at the time of cesarean section but in my opinion, it is less traumatic to do a section

hysterectomy than to attempt to enucleate large intramural or broad ligament fibroids out of the wall of the uterus. A pedunculated fibroid on a small pedicle is another situation and removal may be accomplished without risk.

Rarely, in congenital anomalies such as a bicornuate uterus, the nonpregnant portion may become dependent and obstruct the progress of labor. In such an event, cesarean section may have to be resorted to.

Carcinoma of the cervix, in most large series reported, apparently occurs with less frequency during pregnancy than in the nonpregnant uterus. Ward[3] states that in 36,274 obstetric cases at New York's Woman's Hospital, 10 cases of malignancy of the cervix were revealed.

In the treatment of a parturient woman with cervical carcinoma, there appears to be no unanimity of opinion among gynecologists. However, therapy seems to be based on the period of gestation as regards the chance of fetal survival. Should the tumor be diagnosed prior to the time one would expect the baby to survive delivery, all measures should be directed against the malignant growth, including radium, x-ray therapy and radical surgery, disregarding the uterine contents. After the twenty-eighth week of pregnancy, one may perform a cesarean section, followed by appropriate therapy directed toward the malignancy. In no event should a viable fetus be allowed to deliver through the carcinomatous cervix.

CATEGORY III. OVARIAN

Ovarian tumors complicating pregnancy, while not as frequently encountered as myomata of the uterus, are present often enough to keep in mind the possibility. Grimes and collaborators[4] in a review of 15,071 consecutive pregnant women, recorded enlargement of a 6 cm. or more to be present in the ratio of 1 to 274 pregnancies. Most investigators report a much smaller incidence. Fortunately, the majority of these are of a benign cystic variety. Dougherty and Lund[5] from an intensive research of the literature, reported 30 instances of solid ovarian tumors complicating pregnancy and added 6 cases from Charity Hospital for a total of 36 cases.

Diagnosis is greatly enhanced if the patient presents herself for prenatal care early in pregnancy. Small cystic ovarian tumors, 6 cm. or less, should be followed expectantly and usually will not require removal or hamper vaginal delivery unless they enlarge or torsion occurs.

Larger ovarian cysts, all solid ovarian tumors and those suspected of being teratomas or dermoids should be removed during pregnancy, the optimum time being the fourth to fifth month of gestation, after the placental function is well established and before the pregnant uterus attains such size as to hinder surgery.

Should these ovarian masses be discovered at or near term or in labor and be incarcerated in or not easily elevated from the true pelvis, cesarean section with removal of the tumor should be undertaken. Danger of rupture of a dermoid with severe granulamatous peritonitis, hemorrhage into the cyst or peritoneal cavity due to trauma, and torsion of the tumor must be recognized. Those ovarian masses which may easily be elevated out of the pelvis so as not to impede the progress may be removed during the puerperium after vaginal delivery has been accomplished. Some, of course, will be corpus luteum cysts and may regress spontaneously during the postpartal period.

If at all possible, one should employ the use of diagnostic pelvic x-rays, intravenous pyelograms, and possibly, proctoscopic examination. I am sure many operators have been embarassed on opening an abdomen for an ovarian tumor only to discover an ectopic kidney, rectal carcinoma, or retroperitoneal tumor.

It is also advisable, in the presence of an obvious dermoid in an ovary at surgery, to closely inspect and bivalve the opposite ovary, inasmuch as approximately 20 to 25 per cent of these tumors are bilateral and a small one enucleated at this time may prevent loss of the ovary or future surgery.

CATEGORY IV. EXTRAGENITAL

In considering the extragenital masses which one may encounter as obstructive to vaginal delivery, the distended bladder and rectum should not be overlooked. Isolated cases have been reported in which these situations were present and prevented normal descent of the presenting part. Treatment, consisting of evacuation of the impacted feces or catheterization of the bladder, is self evident.

Carcinoma of the rectum occurs as frequently in pregnant women as in nonpregnant women of a corresponding age group and it behooves us to routinely employ digital examination of the rectum in our physical examination when the patient is first seen prenatally and not to limit this procedure to following the progress of labor. In addition, if our suspicious are sufficiently aroused, we should not hesitate to obtain a barium enema and proctoscopic examination.

In early pregnancy, radical excision of the rectal malignancy with gland dissection or a Miles abdomino-perineal resection should be done without regard for the fetus.

If the pregnancy is at or near term, it is best to avoid compression of the tumor mass or the danger of rupture of the rectum and subsequent dissemination of the malignant cells and infection; therefore the abdominal route should be chosen for delivery. Later, radical extirpation of the rectal carcinoma may be undertaken.

Loveland and Dockerty[6] and Voegelin and McCall,[7] in excellent reviews of extragenital pelvic tumors in women and of bony abnormalities influencing the conduct of labor, presented very comprehensive information on the less commonly seen masses presenting in the birth canal.

To summarize these lesions we should consider the congenital anomalies such as an ectopic pelvic kidney, teratomas and meningocele; the neurogenic tumors such as the neurofibroma, ependymal cell glioma, ganglioneuroma and ependymoblastoma; the bone tumors illustrated by the benign giant cell tumor, osteogenic sarcoma, Ewing's tumor and sacrococcygeal chordoma; and a miscellaneous group which may include myogenic tumors, fibromata, metastatic carcinoma, lipomata, retroperitoneal cysts and Hodgkin's disease and others of the lymphoma group.

The majority of these lesions, if of any significant size, should be detected on a careful pelvic examination, which must include palpation of the anterior sacral surface and all pelvic walls within reach of the examining fingers.

If such a tumor is encountered during early pregnancy, every effort should be made to establish a definite diagnosis. Included should be x-rays of the pelvic bones, intravenous or retrograde pyelography, proctoscopic examination and barium enema, and possibly, an exploratory laparotomy.

Should any of these tumors be encountered in labor or near term and progress of labor is obstructed, cesarean section should be done with exploration to determine the nature of the mass so that definitive therapy, if indicated, may be instituted at a later date.

In conclusion, I would like to briefly mention the experience locally at the Baton Rouge General Hospital, an institution of 250 beds. In reviewing the 4897 deliveries which occurred during the calendar years 1953 and 1954, four cesarean sections were done during this period for pelvic masses which were either obstructing labor or judged to be hazardous to vaginal delivery. Two of these four were due to large uterine myomata and the remaining two were benign ovarian teratomata (dermoids). This would be an incidence of 1 to 1124 deliveries insofar as the limited numbers reviewed indicated.

SUMMARY

1. A review of pelvic masses obstructing vaginal delivery is given.

2. Emphasis is placed on careful pelvic examination as early in pregnancy as possible together with follow-up examinations prenatally and during labor as indicated.

3. Recommendation is made that all diagnostic facilities necessary be used to

determine the type of mass present.

4. A short review of a small number of cases encountered locally is presented.

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RADIOLOGICAL EVALUATION OF LOW BACK PAIN *

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Every radiologist has on many occasions been asked by the clinician for his opinion as to whether or not, what is seen on the x-ray films, is sufficient to produce symptoms which vary greatly in different patients.

The problem of low back pain is complex and far from completely understood, but, if we are willing to give careful consideration to the known facts, it will help to clarify the bewilderment common to those unwilling to attempt it.[1]

The approach to each case of low back pain should be threefold: (1) an accurate recording of facts from the inception of the patient's complaint, (2) general physical examination, including a comprehensive investigation of possible foci of infection and analysis of body habitus; (3) x-ray examination. This is placed third, not to minimize its importance or necessity, but rather to emphasize the first two which are so frequently neglected, discarded, or overshadowed, because of an x-ray report revealing a departure from normal which may have no bearing whatever upon the symptoms.

The literature of roentgenologic findings in low back and sciatic pain is plentiful. This area is subject to many congenital anomalies, as well as acquired changes due to trauma, disease, or other pathologic conditions.

It must be emphasized that low back pain is a symptom, not a disease. This symptom complex is related to many of the medical and surgical specialties.

Shands [2] divides the cases characterized by pain in the low back region, according to etiology, into four main groups:

1. Ligamentous and muscular injuries of the normal lumbar spine and pelvis.
2. Visceral lesions causing low back pain.
3. Acquired lesions of the skeleton.
4. Congenital anomalies of the low back.

The roentgenologist is called upon to examine patients in all of these groups. In this paper, the literature has been reviewed and the x-ray findings believed to play a role in the cause of low back pain have been listed.

LIGAMENTOUS AND MUSCULAR INJURIES OF THE NORMAL LUMBAR SPINE AND PELVIS

In the first group, the lesion is presumably a tear or sprain of a ligament which supports and limits the mobility of a large weight-bearing joint. They are classified into lumbosacral sprain and sacroiliac sprain. In this group the x-rays are useful in differentiating the sprains from the following:

1. Chronic arthritis of the lumbar spine or sacroiliac joints.
2. Fractures.
3. Ruptured intervertebral disk.
4. Tuberculosis.
5. Malignancy.
6. Some visceral diseases.

VISCERAL LESIONS CAUSING LOW BACK PAIN

The second group, or visceral lesions which can cause low back pain, include the following:

1. Gastrointestinal conditions such as an overloaded colon causing irritation to the lumbar nerves; a spastic colon; disorders of the appendix and rectum; intra-abdominal adhesions; and hernias.

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2. Urological conditions such as infections and tumors of the prostate.

3. Gynecological conditions, for example, retroversion and retroflexion of the uterus.

4. Central nervous system lesions—to name a few: tabes, meningitis, syringomyelia, lateral sclerosis, tumors of the spinal cord, and tumors of the cauda equina.

5. Sciatic neuritis.

6. Infections and tumors of retroperitoneal structures.

7. General infectious diseases causing low back pain such as typhoid, influenza, and septicemia.

ACQUIRED LESIONS OF THE SKELETON

The third group, or acquired lesions of the skeleton, would include the below listed conditions:

1. Low grade infections. Inflammatory lesions, such as rheumatoid spondylitis, give morning pain; whereas osteomyelitis gives constant pain.

2. Neoplasms. These give constant low back pain. They may be either primary or metastatic. From the roentgenographic point of view, involvement of a vertebral body or bodies and uninvolvement of the intervertebral discs, so that they remain clear and of usual width, is pathognomonic of malignant disease.[3]

3. Fractures. Traumatic spondylitis, as well as fractures of facets and pedicles give static backache.

4. Pathological conditions of the disc [4]

A. Congenital absence of the disc

B. Pathological conditions of the nucleus pulposus and annulus fibrosus, such as, retropulsion or antipulsion; lateral shift; calcification; infiltration by other tissues, such as fibrous tissue, bone or blood vessels; and dehydration.

C. Pathological conditions of the cartilaginous end-plates, such as, prolapse of the nucleus pulposus; chronic trauma; acute trauma; and diseases of the disk, for example, acute osteomyelitis or tuberculosis.

D. Pathological conditions of the vertebral bodies causing softening of the body and prolapse of the disk into the body.

At this point since we are talking about the intervertebral disk, it may be well to state that thinning of the disk may not be a direct cause of pain, but that the pain is explained by: [5]

I. Tension upon the capsular ligament.

II. Encroachment upon the size of the lumen of the foramina.

III. Impingement of the ends of the articular process against the pedicle above and the lamina below.[6]

5. Chronic hypertrophic arthritis.

6. Metabolic disorders.

7. Neurological conditions.

8. Psychosomatic conditions which give constant pain.

9. Pathologic processes in the muscles and ligaments which cause pain by irritation of the posterior divisions of the spinal nerves; sciatic pain due to tense fascia lata; and pain due to fascial adhesions.

CONGENITAL ANOMALIES OF THE LOW BACK

Cases characterized by pain in the low back region due to congenital anomalies from the fourth main group. It is in this category that roentgenograms are of great help. Below are listed the more important congenital anomalies: [7]

1. Elongation of the transverse process of L 5. These cause pain by impinging on the ilium, causing friction, and thus giving rise to a painful bursa. To demonstrate the relation between the transverse process and the iliac crests, the ray should be directed upward at a 30° angle.

2. Transitional vertebra. These may be either sacralization of the last lumbar vertebra or lumbarization of the first sacral segment. Sacralization of the last lumbar vertebra occurs in 3.5 per cent of normal spines routinely taken. However, it is held that with 50 per cent of the people falling in that group, low back pain is a common experience. Occasionally, cases are encountered that show a nonfusion of the first sacral body to the second and which clinically exhibit more or less motion. Such types of incomplete development are fre-

quently characterized by lumbosacral pain and disability.[3]

3. Defect of the neural arch. Those defects with no obvious protrusion of a sack from the spinal cord are called spina bifida occulta, and are generally found in the region of L 5 or S 1, and occur in about 6 per cent of all spines x-rayed.

4. Variations of the spinous processes. This group is comprised mostly of the "close spines" as described by Ferguson, and occur particularly at the L 4 and L 5 level.

5. Unstable lumbosacral angle. This may take two forms: If the center of gravity of the trunk, as represented by a vertical line through the center of L 3, passes anterior to the sacrum, the weight is not sustained by bone, but by muscles and ligaments, which are, therefore, liable to strain. When the plane of the articular surface of S 1 is too far from the horizontal, sheering stresses are set up which again make the muscles and ligaments liable to strain. We use 45° or over, as being over the limits of normal.

6. Variations of the articular facets. Asymmetry of the planes of articulation of the facets on the left and on the right are particularly liable to form a mechanical basis for strain. Other important points to observe, when studying the facets, are: [10]

A. Narrowing of the space between the articulating surfaces of the facets, or subluxation of the apophyseal joints.

B. Marginal proliferation about the articular surfaces of the facets, indicating hypertrophic changes, or in many instances, traumatic arthritis.

C. Fractures through the surfaces of the facets or through the adjacent laminae and pedicles. Points A, B, and C rightfully belong in the group of acquired lesions of the skeleton, but were purposely included here to keep all considerations of the facets together.

7. Spondylolisthesis.[8] These are cases where the lamina are not united to the pedicles, the body is displaced forward, and the spine and lamina are left behind. In cases of a separate neural arch with no displacement of the body, the most prevalent term is "prespondylolisthesis". Meyerding gives the following percentages for the location of spondylolisthesis:

82 percent slipping of L 5 on S 1.

11.3 per cent L 4 on L 5.

Less than 1 per cent of L 3 on L 4 and L 2 on L 3.

4.4 per cent reverse spondylolisthesis.

8. Platyspondyly.[9] This is a congenital anomaly consisting of a widened vertebral body, diminished in vertical diameter and posterior spina bifida and usually limited to L 4 and 5. The adjacent intervertebral disks are increased in height. Complaints are of weakness of the back and neurotrophic signs due to the spina bifida.

MINIMUM SEVEN POSITIONS FOR COMPLETE LOW BACK SURVEY

It is felt that seven views is the minimum number for the complete survey of the lower back. Additional exposures are taken as required. These seven views are as follows:

View I. AP of the pelvis. This gives an overall survey of the relationship of the lower vertebrae to the pelvic bones and hips. This position may be supplemented by:

A. AP pelvis, with both lower extremities flexed and abducted. This adds the lateral views of the proximal femurs (frog position).

B. AP pelvis, patient erect, barefooted, both feet flat, parallel and bearing equal weight. This view gives difference in length of the lower extremities by direct measurement.

C. Superior inferior view through the pelvic canal, patient semi-recumbent (Thom's position).

D. Right or left oblique.

View II. AP lumbar spine. This view gives an overall survey of the lumbar bodies and interspaces. Attention is directed to contour, texture, and relationship of the bodies, pedicles, lamina, spines, and transverse processes. This may be supplemented by: An AP spot of any questionable body.

View III. AP five inch spot of the lum-

bosacral junction, with the central beam through the interspace, angled 30° toward the head (Ferguson position). Attention is directed to the interspace and adjacent body surfaces; both sacroiliac joints; articular facets for symmetry and plane of action; state of fusion of the sacral wings; the transverse processes of L 5 with their relation to the sacrum; the condition of the arch of L 5. This view may be supplemented or replaced by a larger spot if the distal sacrum and coccyx is to be included.

View IV. Lateral lumbar spine. This view gives an overall survey of the lumbar area. Attention is directed to the first four bodies, their relationship, the interspaces and spinous processes. (L 5 and the sacrum are examined by a special view). This may be supplemented by: opposite lateral; spot of any single questionable body; and if increased lordosis is to be estimated or the center of gravity located, this exposure is made with the patient erect.

View V. Lateral lumbosacral five inch spot. This gives better detail of the interspace and relationship of L 5 to S 1. This may be supplemented by: opposite spot; same spot, patient erect, for determination of plane of sacrum in weight bearing as measured by differences in the anterior sacral angle; larger spot if distal sacrum and coccyx is to be included.

Views VI and VII. Right and left obliques. These views allow closer inspection of the interarticular facets and intervertebral foramina.[10] These may be supplemented by spotting any questionable area.

SUMMARY AND CONCLUSIONS

The problem of low back pain is complex and far from completely understood. The approach to each case should be threefold: (1) an accurate recording of facts, (2) general physical examination, and (3) x-ray examination.

On the basis of etiology, cases of low back pain are divided into four groups:

1. Ligamentous and muscular injuries of the normal spine and pelvis.
2. Visceral lesions causing low back pain.
3. Acquired lesions of the skeleton.
4. Congenital anomalies of the low back.

There exists a sufficiently large element of error in the diagnosis of low back pain, regardless of the thoroughness and comprehensiveness of the clinical investigation, to make roentgenographic examination of the area obligatory, in order that there may be some degree of certainty as to the fundamental factors involved in the production of the disability.

It is our contention that a minimum of seven positions are necessary for a *complete* low back survey, and if more complete surveys were done, and carefully interpreted, the element of error in diagnosis of low back pain would be reduced appreciably.

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ROLE OF THE AMERICAN CANCER SOCIETY IN PROFESSIONAL EDUCATION IN LOUISIANA

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NEW ORLEANS

All practitioners are aware of the campaign of the American Cancer Society to have the public regard every doctor's office a detection center for cancer. Since

the funds of the organization in Louisiana are far too limited to be used in supporting the treatment of individual cancer cases, the resources of the organization have been directed toward supporting research and efforts of the medical profession to disseminate all existent information about the diagnosis and treatment of the disease. In view of the importance of the disease from the standpoint of the number of people affected in the state each year, it would seem both timely and useful to set forth the current program of the Louisiana Division, American Cancer Society, Inc.

The program of the Louisiana Division consists of five major parts: (1) Provision of visiting speakers and visual aid material to local and state medical groups, (2) Support of a Cancer Detection Clinic at Tulane University at present and that of Louisiana State University in the past, (3) Major contribution to the Tumor Registry at Charity Hospital in New Orleans and complete support of the Tumor Registry at Charity Hospital in Shreveport, (4) Cancer Research Grants to residents of Louisiana, (5) A biennial Louisiana Cancer Conference to be initiated during the current year.

The Cancer Society has a complete set of films on diagnosis and treatment of cancer prepared by groups sponsored by the organization. The list of these films, many of which are in duplicate, is offered. They may be obtained by writing to the Louisiana Division, American Cancer Society, Inc., at 822 Perdido Street, and stating the dates desired for showing the film and the anticipated date of its return. Television programs of the national Society on cancer topics have been recorded on kinescope and these are also becoming available in increasing numbers. Funds are set aside each year to defray the expenses of inviting visiting speakers to local and state medical society meetings. Any organized medical group may participate by using the application form which appears in the back of this Journal. The funds will be distributed on an impartial basis by a medical committee, but applications must be made well in advance of the anticipated meeting.

The Tumor Registry at Charity Hospital was reorganized in 1952, and the American Cancer Society, the State Department of Health and Louisiana State University agreed to contribute funds for its continuation. It is now in operation with records up-to-date for the past six years and includes over 10,000 cases. This not only provides a more adequate and rapid method for evaluating the results of treatment but is a means whereby uniform cancer reporting for the entire state may be achieved. Information concerning each case is coded on International Business Machines cards and an effort is being made to retain uniformity in this coding between registries set up in all hospitals in the state. A consultation service is maintained within the framework of the registry, and any hospital within the state may obtain information and samples of the forms used by writing to the director of the registry at Charity Hospital. This is particularly valuable at the present time, since the American College of Surgeons does not approve cancer clinics in hospitals without an established cancer registry. The registry at Shreveport Charity Hospital also utilizes the same system of classification of patients and coding as the registry in New Orleans. Although the resources of the Louisiana Division of the Cancer Society are not sufficiently large to finance additional registries, it is hoped that the pilot registry at Charity Hospital will serve as a model for other registries throughout the state.

Anyone who treats the cancer patient realizes the deficiencies in present methods of treatment. The obvious way in which this situation can be improved is through research. Although grants made through the Committee on Growth of the National Research Council are available to all who wish to apply, there has been no source of funds for competition at a local level. The Louisiana Division has estab-

lished such a fund and annually awards at least $5,000. to investigators within the state who make application before April of each year on standard application forms which may be obtained from the state headquarters of the society. During the past year four such grants were awarded. It is hoped that this will encourage young investigators to initiate projects which some day may provide the answers which are now lacking and serve as limitations to the management of the disease.

Just as visiting speakers are desirable in medical meetings, contact with other scientists engaged in similar research is essential for investigators in the Louisiana area. Therefore, a biennial tumor conference has been set up. At each conference a given kind of cancer will be discussed by national and international authorities. Opportunity will be given to local investigators in the clinical or basic sciences to discuss problems of techniques, experimental design and theory with visiting participants.

The professional education program is administered by The Board of Directors through its committees. Applications for funds for the purposes outlined are reviewed by fellow members of the medical profession. The program has evolved over a number of years and is designed particularly for Louisiana. It provides means by which the two individuals who are best fitted to strike back at cancer, the physician and the investigator, may work more effectively in the state.

FILMS AVAILABLE
FOR PROFESSIONAL AUDIENCES
FROM
LOUISIANA DIVISION, AMERICAN CANCER SOCIETY, INC.
822 Perdido Street, New Orleans 12, La.

1. "What is Cancer"

   16mm—Color—Sound—25 Minutes

   This is a film for nurses (and hospital and public health staffs). It emphazises that nurses have a special role in early diagnosis and in rehabilitation of patients who have undergone treatment. Scenes are presented from operating rooms and clinics together with animation of the problem of the beginning, spreading, and curing of cancer. Historical background material on cancer is also included.

2. "The Exfoliative Cytologic Method in the Diagnosis of Gastric Cancer"

   16mm, Color—Sound—22 Minutes

   Produced by the American Cancer Society and prepared by the Cornell University Medical College and The New York Hospital under the supervision of Doctors George N. Papanicolaou and William A. Cooper.

   The background of this cytological method is briefly shown, its present usefulness and disadvantages are indicated, and the procedure is visually presented by live photography and stylized animated drawings.

3. "Cancer: The Problem of Early Diagnosis"

   16mm—Color—Sound—30 Minutes

   This is the first of the following series of five professional films (#3 through #7 on this list) produced in cooperation with the National Cancer Institute of the United States Public Health Service on the "Problem of Early Diagnosis".

   The purpose of this film is to stimulate discussion of the problem of diagnosis. It is recommended that this picture be used as a part of a program planned on the subject of cancer.

4. "Breast Cancer: The Problem of Early Diagnosis"

   16mm—Color—Sound—34 Minutes

   The film may be used for audiences of medical societies, medical schools, hospital staffs and any gathering of physicians or nurses. It underscores the need for regular and thorough examinations.

5. "Gastrointestinal Cancer: The Problem of Early Diagnosis"

   16mm—Color—Sound—33 Minutes

   The film shows how, through use of modern diagnostic methods and certain simple laboratory tests, many gastro-intestinal cancers can be found at the early, curable stage.

6. "Uterine Cancer: The Problem of Early Diagnosis"

   16mm—Color—Sound—21 Minutes

   Audience: Medical societies, medical students, hospital staffs and any gathering of physicians and nurses.

7. "Oral Cancer: The Problem of Early Diagnosis"

   16mm—Color—Sound—33 Minutes

   This film has been produced for both the medical and the dental professions and appears to have considerable practical value for the practicing physician and dentist. "Oral Cancer" outlines the physician's and dentist's responsibility for the early recognition of malignant and potentially malignant lesions of the oral cavity; depicts the steps in a thorough examination of the

mouth which can be carried out by either the dentist or the doctor; presents significant statistical data illustrating the increased five-year survival rates when such lesions are treated early, and concludes by presenting six cases of oral cancer illustrating early cancers of the gingiva, tongue, buccal mucosa, palate, lip, and the floor of the mouth.

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BACKACHE DURING PREGNANCY; ITS ETIOLOGY AND MANAGEMENT *

JACK WICKSTROM, M. D. †
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NEW ORLEANS

Although our upright posture represents the culmination of the ascendency of organic life over gravity,[7] and, although by assuming this upright posture our upper extremities have been freed of their locomotive functions and allowed to develop into one of our greatest instruments and assets,[1] this upright posture has not been accomplished without penalties. Some of the more obvious penalties we pay for our bipedalism are flat feet, varicose veins, visceroptosis and—backache. The last of these, backache, is of special interest to us and forms the basis of this presentation.

Backache appears to affect all adults at various times and in varying degrees, and females during gestation are no exception. In fact those who concern themselves principally with diseases of women are certain all women have backache, and especially all pregnant women, and therefore, an aching back is a normal state for the female. Since backache is a symptom and not a disease we will approach this problem by first enumerating the various causes of backache, especially those specifically associated with or secondarily aggravated by pregnancy. We will then discuss methods of value in ameliorating and controlling this all too common symptom complex. For purposes of discussion the myriad causes of back pain can be divided into three groups; those causes unrelated to pregnancy; those associated or aggravated by pregnancy; and those directly arising from the process of gestation.

The first group includes congenital anomalies, fractures, sprains, strains, herniated intervertebral discs, infectious processes, neurologic, metabolic and neoplastic diseases, as well as a host of thoracic, abdominal, and pelvic pathology which produces referred pain in the back. Although not related to pregnancy, all of the above must be considered in a differential diagnosis of the pregnant woman's complaint of back pain. We must also be cognizant of the fact that, irrespective of its etiology, back pain is increased in severity either as a result of pelvic congestion or because of psychogenic disturbances experienced by most patients during gestation. Congenital anomalies such as spondylolisthesis and incongruity of facets are especially prone to aggravation during pregnancy and produce increasingly severe back pain as the altered body mechanics become more marked during the last trimester.

Although surgical intervention for the correction and relief of such conditions is contraindicated by the presence of the pregnancy their presence must be recognized and proper conservative measures instituted to afford the patient relief. It should also be pointed out that neoplastic lesions, either primary or secondary in the spine are adversely stimulated by the increased titer of growth hormone present during pregnancy and progress in a most bizarre and rapid manner. This effect sometimes is so marked that some consider it an indication for interruption of pregnancy. Failure to properly evaluate and diagnose such a lesion may not only prove embarrassing for the clinician but exceedingly dangerous for the patient.

Our second group of causes of backache, namely those secondarily accentuated or influenced by the pregnancy are two in number, namely faulty body mechanics and

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pressure or traction on the spinal nerves passing through the pelvis.[5, 6, 9, 10, 13, 14]

The most common cause of backache in all age groups, irrespective of sex, or the status of uterine physiology is poor posture and altered body mechanics. Obviously the alterations in body mechanics associated with pregnancy are simply exaggerations of postural defects usually associated with back pain. These consist of the relaxation of the abdominal musculature, a pendulus abdomen, increased lordosis, and forward rotation of the pelvis. It is no wonder then that backache should arise so frequently during pregnancy as a result of these postural defects. Backache, arising as a manifestation of postural defects, usually appears during the second trimester of the pregnancy and is characterized by discomfort in the back upon arising from the supine position; increased discomfort during the latter part of the day with fatigue and incomplete or partial relief by recumbency, especially with flexion of the hips and knees. Since altered body mechanics is the most common cause of backache during pregnancy it is fortunate that this type of patient can be offered the most as far as treatment is concerned. Successful management begins with an accurate evaluation and reassurance of the patient by the physician coupled with active participation in a regime of definite periods of rest coupled with exercises designed to counteract the effect of gestation on the abdominal muscles and to increase the strength of the pelvic rotators. The relief of back pain afforded by postural exercises is increased by instituting the exercise regime during the first trimester before the symptoms become too severe and the alteration in body mechanics too marked. All exercises are based on those usually classified as flexion exercises as outlined by Williams.[12] Those exercises which produce unusual strain on the abdominal wall or increased intra-abdominal pressure are usually avoided.

The importance of the proper support both while the patient is lying down as well as during ambulation should not be overlooked. A semifirm bed achieved by placing a support (plywood, fiber board or masonite) between the mattress and spring of the bed is essential if the patient is to be afforded adequate rest during the night as well as during the daily rest periods. Some patients obtain increased comfort in the semiflexed position through the use of a bedding role beneath the knees to flex the hips and knees or

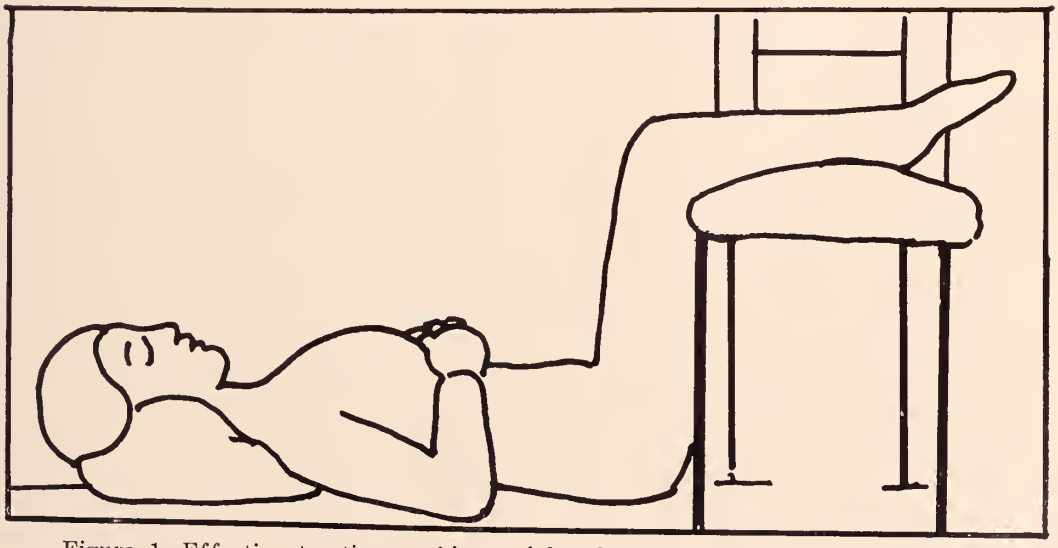


Figure 1. Effective traction on hips and low back can be obtained by lying supine with lower leg resting on chair.

This is extremely efficient in overcoming severe lumbar muscle spasm.

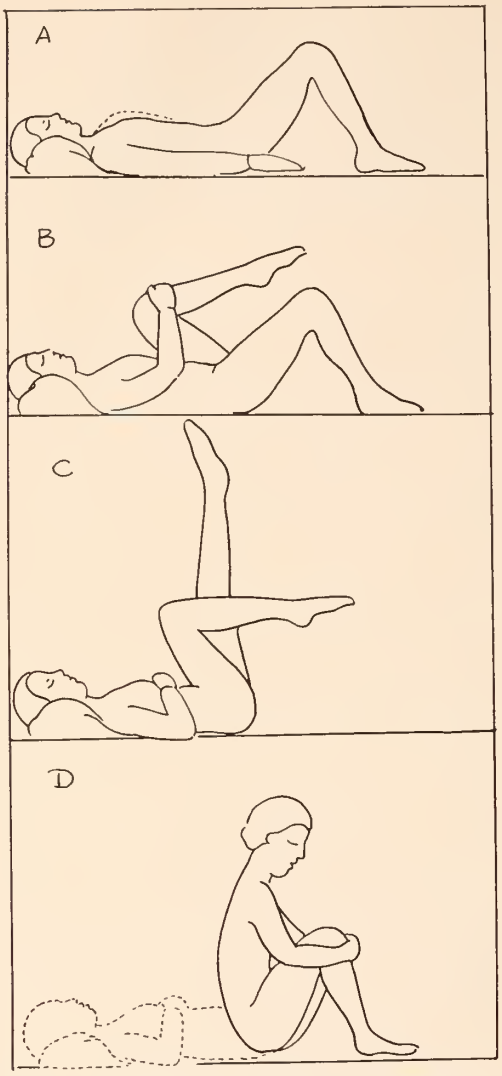


Figure 2. Exercises designed to decrease the lordosis and increase the strength of abdominal musculature as modified by Williams and Ishmael and Shorbe.

A. Hips and knees flexed to flatten lumbar spine against floor, deep breathing is practiced to secure elevation of thorax.

B. With knees flexed alternate knees are drawn up onto trunk to stretch tightened extensors of spine and overcome lordosis.

C. Slow straightening of the flexed hip and knee stretches the hamstring and increases tone in abdominal musculature.

D. With hips and knees flexed patient slowly assumes erect sitting position, useful in increasing tone of abdominal musculature.

the elevation of the lower leg on a chair while recumbent.

The use of a lumbosacral support is frowned on by some authorities; however, an adequate lumbosacral support which comes well down over the buttocks and gently supports the lower abdomen anteriorly, frequently affords significant relief to these patients. It should be pointed out that such garments must be well constructed, adequately reinforced and should be long, coming well down over the buttocks in back.

Although success is dependent upon complete cooperation on the part of the patient, the correction of postural defects through appropriate rest and exercises most frequently fails because the patient has not been sufficiently impressed with the importance of the exercises or adequately instructed in their use. This results in intermittent application of the exercises and incomplete cooperation on the part of the patient and failure of the method.

The second cause of backache in this group influenced or accentuated by pregnancy results from pressure or traction on the spinal nerves as they course through the pelvis.[14] Such symptoms usually arise from pressure on the ilio-femoral and ilio-inguinal nerves although the sciatic nerve or the sacral plexus is occasionally involved. Backache associated with pressure on peripheral nerves is characterized by pain along the crest of the ilium radiating into the lower abdomen and anterior medial aspect of the upper thigh if the ilio-femoral or ilio-inguinal nerves are involved. Such backache is also characterized by relief obtained in a recumbent position or in recumbency with elevation of the hips. Occasionally, injecting exceptionally painful trigger areas along the crest of the ilium affords some relief. This group of patients are frequently improved by the use of a lumbosacral support as outlined above.

The third group of causes of backache unique to the period of gestation are those associated with disturbances of the endocrine balance and result from certain hormonal fractions which are present only during pregnancy. These fractions result in relaxation of the pelvic ligamentous structures. Todd [11] in 1923 first showed

that the pelvis of guinea pigs separated at the symphysis during gestation and parturition. Hisaw [4] demonstrated that this mechanism resulted from relaxation of the ligaments at the symphysis pubis and sacroiliac articulation. He also showed that hormonal substances arising in the ovaries and fetal membranes produced this phenomenon. This substance he termed relaxin. It was later demonstrated that estrogens stimulate the formation of acetylcholin in the uterus. Emery and his workers [2, 3] felt that the increased vascularity in the uterus possibly increased the extent of pelvic relaxation. They have further studied the effect of prostigmine and desyoxycorticosterone both of which produce relaxation in the pelvis in guinea pigs, and to a certain extent in monkey's. A similar effect has been demonstrated in humans. A similar pelvis relaxation has been demonstrated by this same group in male monkey's after priming with either theelin or stilbestrol followed by prostigmine or releasin.[2, 3]

Although the presence of pelvic relaxation during pregnancy and even during menstruation has been conclusively demonstrated, its importance as an etiology factor in producing back pain during pregnancy is somewhat difficult to evaluate since accurate methods of measuring the amount of these various substances are not clinically applicable. Furthermore, there is considerable variation in the response to these hormonal factors between various individuals. It is currently held that hormonal relaxation of the pelvis accounts for a certain percentage of symptoms in backache during pregnancy and that such backache is usually characterized by localization over the posterior iliac spine and over the symphysis pubis, increased in severity with activity, and aggravated by pelvic distraction and compression. Such patients are usually afforded considerable relief by the wearing of some constricting support encircling the pelvis above the trochanters. Occasionally such patients, with exceptionally severe relaxation of the pelvis, cannot be afforded relief except by bed rest. It is usually believed that the number of patients with backache arising from relaxation of pelvic structures is relatively small although its effects may contribute to symptoms from other causes.

SUMMARY

An enumeration of the various and sundry causes of backache during pregnancy has been presented.

The importance of adequate evaluation and accurate differential diagnosis has been discussed.

The most common cause of backache during pregnancy results from the altered body mechanics characteristic of pregnancy. An aggressive regime of proper rest, postural exercises and adequate support have been outlined which if conscientiously applied and accurately carried out afford the most satisfactory means of managing such cases.

The effect of hormonal fractions and their effect on pelvic ligaments has been discussed. It is felt that a relatively small percent of women demonstrate the effect of pelvic relaxation as a cause of backache during pregnancy but that the number, though small warrants its consideration as a factor in backpain in all pregnant women.

There is no panacea successfully applicable in all cases of backache during pregnancy.

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TREATMENT OF TUBERCULOSIS TODAY

Authoritative opinion as to the prevalence and treatment of tuberculosis is of importance to every physician. Approximately 1,200,000 people who have had a tuberculous infection need medical supervision in some degree today. Approximately 800,000 of these are believed to have inactive tuberculosis; 400,000 are estimated as being active. Of the 400,000 active cases, about 250,000 are known to health authorities. The mortality rate has dropped in the past decade from some 40 per 100,000 to roughly 12 per 100,000, or in some instances, an estimated 10 per 100,000. The incidence of new cases annually has not shown a corresponding decrease in proportion to the drop in mortality. Tuberculosis is still a leading cause of death in the age group from 15 to 34. Within the next year, it is estimated 100,000 people will catch tuberculosis, and it still kills more people than all the other infectious diseases combined. It is obvious that the reduction in the mortality rate is not to be interpreted as an indication that the disease is disappearing. The drop in mortality of the last ten years is attributed to the three chemotherapeutic agents and to surgery, which is made possible by them. Streptomycin came into general use late in 1947; para-aminosalicylic acid in 1949, and isonicotinic acid hydrazide in 1952.

The use of these drugs, together with other forms of therapy, has been reported upon six times by the Veterans Administration-Army-Navy group, which has been studying the chemotherapy of tuberculosis since 1946. Comparative studies have yielded information of great value. As noted in the most recent report of the cooperative study, and in other reports, with the advent of chemotherapy there has been a tendency towards increased liberalization of the bed rest regimen. Authorities differ as to the degree and duration of rest. Bed rest is still regarded by many as the basic plan around which all other forms of therapy should be built.

As in the past, much discussion turns around the question of activity of tuberculosis lesions. An inactive lesion has been defined as one showing roentgen stability without evidence of cavity, and adequate negative bacteriological studies for a period of at least six months. A lesion not filling these criteria is active. The general consensus is that all tuberculosis lesions which are considered active should be given the benefit of chemotherapy. This becomes especially important in light of the figures given above, in which the mortality

rate has declined about 50 per cent in the past ten years but the incidence of new cases is not showing a corresponding decrease.

It is stated authoritatively that the utilization of chemotherapy for the primary type of pulmonary tuberculous lesion does not in any way accelerate its healing. The impression has been forming that the chemotherapy exerts a bacteriostatic effect upon the germ of tuberculosis. The defenses of the organism are then brought into the struggle to overcome the disease more effectively. In connection with these thoughts it is remarked that there has been disagreement over a period of years as to whether the tubercle bacilli found by microscopic examination of smears from surgically resected residual lesions of patients who have had prolonged chemotherapy are alive, dead, or merely asleep. It is now known that by prolonged culture by special techniques positive findings may be found in patients who have received treatment for more than a year. An additional bacteriological finding is of importance. Fitzsimmons Army Hospital reported that 50 per cent positive cultures were obtained from perihilar lymph nodes of 103 resected specimens. The significance of these findings is, as would be expected, still under discussion.

In regard to the manner in which the chemotherapeutic agents are to be used, it is agreed that two should be used together, and except in tuberculous meningitis or miliary tuberculosis, it is not necessary to use three. The advantage of using two is that only by such means can the appearance of resistant acid fast bacilli be prevented in the sputum. Twelve months of chemotherapy is regarded as an absolute minimum, with eighteen to twenty-four months advised in many cases. Tubercle bacilli were found in culture in approximately 10 per cent of the patients who were treated for twelve months.

The dosage currently used may be approximated as follows: Streptomycin is used in a 1 gram dose twice a week, except under unusual conditions. Isoniazid is used in 300 mg. doses, for the average patient, daily. This dose is increased by three or four times in miliary tuberculosis or tuberculous meningitis. Para-aminosalicylic acid is used in doses of 4 grams of the acid (approximately 5 grams of the sodium salt) three times a day. Because of gastrointestinal irritation it has been found necessary to build this dose up gradually. A different form of para-aminosalicylic acid under the name of Therapas (a combination of sodium para-aminosalicylic acid and p-carboxy-benzene-sulfo-di-n-ethylamide) has been reported as giving a higher level of this therapeutic agent in the blood with less gastric irritation.

Indications for surgery are in a continuous state of discussion and revision. The period of preoperative chemotherapy in the cooperative study reported above exceeded three months in 75 per cent of the cases. Six months of postoperative chemotherapy is now recommended by the surgical committee.

Other drugs undergoing study are Pyrazinamide, and Seromycin (cycloserine). The latter drug has been quoted as showing favorable results in patients severely ill with pulmonary tuberculosis.

Pneumothorax has been largely superseded by other measures in this chemotherapeutic regime, and the same is true to a less extent of pneumoperitoneum.

It is apparent that the therapeutic effectiveness of the physician's efforts in the care of tuberculosis has been greatly increased in the last ten years. The method and the procedures are not static. The physician's obligation in discovering and treating tuberculosis is now more keenly felt than ever.

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King, Donald S.: Present status of the treatment of tuberculosis in man, J.A.M.A. 158:829 (July 9) 1955.

Current Therapies of Tuberculosis, Bull. Biol. Sci. Foundation, Ltd., Vol. I, No. 8, (November) 1954.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1956 ANNUAL MEETING

The 1956 Annual Meeting will be held in Alexandria April 23-25 and the following committees on arrangements, appointed by the President of the host Society, Dr. H. Q. Gahagan, are already very active in making plans and arrangements for the meeting.

General Chairman: Dr. H. H. Hardy, Jr.

Advisory Committee: Dr. King Rand, Chairman, Dr. F. M. Lett, Vice-Chairman; Drs. B. C. Blake, M. H. Foster, H. O. Barker, W. M. McBride, J. T. Cappel, George W. Smith, Earl Jones, J. W. Phillips, James Welch, Sr., F. C. Ewing.

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Committee on Decorations: Dr. King Rand, Chairman, Dr. Noel T. Simmonds, Vice-Chairman; Drs. R. U. Parrott, A. N. Evans, Kendrick Taylor.

Committee on Entertainment: Dr. Ben Fendler, Chairman, Dr. R. E. McGill, Vice-Chairman; Drs. Milton A. Honigman, B. H. Texada, O. B. Owens.

Committee on Finances: Dr. W. H. Heath, Jr., Chairman, Dr. M. Lee Jarrell, Vice-Chairman; Drs. J. M. Edwards, W. R. Aderhold.

Committee on Golf: Dr. H. Q. Gahagan, Chairman, Dr. C. P. Herrington, Vice-Chairman; Drs. Paul M. Davis, Jr., E. R. Pincus.

Committee on Hospitals: Dr. Ralph Lampert, Chairman, Dr. A. L. Seale, Vice-Chairman; Drs. Allen C. Winters, J. E. Wheeler, W. P. Hurder, John B. Maxwell.

Committee on Hotels and Meeting Rooms: Dr. D. B. Barber, Chairman, Dr. A. L. Culpepper, Vice-Chairman; Drs. R. C. Scott, W. L. Murrell.

Committee on Lanterns: Dr. Edward C. Uhrich, Chairman, Dr. D. M. Kingsley, Vice-Chairman; Drs. W. G. Wells, V. F. Chicola, W. E. Hogg.

Committee on Publicity: Dr. A. J. Ochsner, II, Chairman, Dr. M. B. Pearce, Vice-Chairman; Drs. R. H. Morris, H. C. Gahagan.

Committee on Registration: Dr. R. Bruce Wallace, Sr., Chairman, Dr. E. A. Norton, Vice-Chairman; Drs. M. L. Denley, R. Pierce Foster, A. M. Alexander.

Committee on Scientific Exhibits: Dr. R. E. C. Miller, Chairman, Dr. R. G. Masterson, Vice-Chairman; Drs. John A. Worley, A. Quinn Hyde, Raymond Seshul.

Committee on Signs: Dr. R. L. Robbins, Chairman, Dr. Alvin H. Honigan, Vice-Chairman; Drs. J. M. Yeager, W. H. Hamilton, H. M. Brian, W. D. Swackhamer.

Committee on Special Matters: Dr. C. J. Ellington, Jr., Chairman, Dr. B. N. Sewell, Vice-Chairman; Drs. Bascom W. Smith, Guy Campbell, R. E. Rowland, S. L. Calhoun.

Committee on Technical Exhibits: Dr. E. D. Wilson, Chairman, Dr. D. B. Barber, Vice-Chairman; Drs. Thomas W. Davis, R. J. Freedman, D. G. Grubb.

Committee on Transportation: Dr. N. M. Brian, Chairman, Dr. A. E. Hensel, Vice-Chairman; Drs. B. M. Wilson, D. L. Trax, L. J. Credeur, J. M. Kittrell.

Committee on Woman's Auxiliary: Dr. J. T. Willis, Chairman, Dr. J. S. Rozier, Vice-Chairman; Drs. J. A. White, H. C. Quantz, M. J. Hair.

Scientific Program

The chairmen of the various scientific sections, list of whom was carried in the August issue of the Journal, have met with the Committee on Scientific Work and preparations are being made for the scientific program. The Committee on Scientific Work, in line with wishes of the Executive Committee, is arranging a similar program to that held at the 1955 meeting; having two sessions, one on surgery and one on medicine, held simultaneously on Tuesday and Wednesday (mornings and afternoons) during the meeting. Members desirous of participating in this program should contact the chairman of the specific section in which they are interested, concerning a place on the program.

Hotel Reservations and Scientific Exhibits

Shortly after the first of the year members will receive a communication concerning procedure to follow in securing hotel reservations and also containing information in regard to scientific exhibit space. It is hoped that prompt replies will be received to these inquiries in order that all requests may be taken care of adequately.

Additional information concerning the meeting will be published in future issues of the Journal. If, however, specific data is desired in the interim, it is suggested that members communicate with the general chairman, chairmen of specific committees or with the office of the Secretary-Treasurer of the State Society.

EDITOR AND GENERAL MANAGER ATTEND STATE MEDICAL JOURNAL CONFERENCE

Dr. Philip H. Jones, your Editor, and Dr. C. Grenes Cole, your General Manager, attended the State Medical Journal Conference, under the auspices of the Advisory Committee of the State Journal Advertising Bureau, held at the American Medical Association Headquarters in Chicago on November 7-8.

The Conference brought out many points of interest and furnished much valuable information on the editing and publishing of medical journals, which we hope, will result in many benefits for our Journal.

Thirty-seven State Journals were represented and those who were privileged to attend, we are sure, profited greatly by being present.

LOUISIANA HEALTH COUNCIL MEETING

Judging by the attendance and the enthusiasm of participating members at the recent meeting in New Orleans of the Louisiana Health Council, we would feel that it was a most successful meeting and merits the commendation and thanks for the officers and personnel of the Program Committee.

It is unfortunate and discouraging that more of our doctors do not become members of this organization or attend its meetings. Much more could be accomplished for the health and welfare of our people throughout the state if more of our physicians would become interested in these programs.

We are looking forward to more participation on your part in the future.

DR. C. G. COLE HONORED BY THE ADVISORY COMMITTEE OF THE STATE JOURNAL ADVERTISING BUREAU

At its recent meeting in Chicago, on November 7 and 8, the Advisory Committee of the State Journal Advertising Bureau honored Dr. C. Grenes Cole by electing him Chairman.

This Committee represents the State Medical Journals of thirty-seven states in their relations with national advertisers. The activities of this committee are largely responsible for the financial stability and success of these State Journals.

Dr. Cole has been a valued member of the Journal Committee of the Louisiana State Medical Society for some years and recently has been most successful as General Manager of the Journal of the Louisiana State Medical Society.

This gracious honor given Dr. Cole is grateful recognition of his considerable effort through a period of many years for the welfare of this Journal and for his valuable contributions as a member of the Committee in recent years. The Journal is most pleased to congratulate Dr. Cole.

DEATHS 1954 * AND 1955 MEMBERS OF LOUISIANA STATE MEDICAL SOCIETY

Dr. Samuel Barkoff, New Orleans, July 10, 1955
Dr. Theodore Thomas Batson, New Orleans, March 13, 1955
Dr. Harry Edward Chalstrom, Jr., Baton Rouge, July, 31, 1955
Dr. Joseph Anthony Danna, New Orleans, December 15, 1954
Dr. Philip C. De Verges, New Orleans, November 9, 1955
Dr. Nicholas Kuntz Edrington, New Orleans, September 22, 1955
Dr. Wm. J. Gilbert, New Orleans, February 21, 1955
Dr. Edgar Beach Hands, Shreveport, July, 1955
Dr. Ewell A. Kleinpeter, Thibodaux, November 19, 1954
Dr. Morris Stirling LeDoux, Rayne, September 29, 1955
Dr. Daniel Cull McCuller, Bossier City, November 17, 1954
Dr. Clifford R. Mays, Shreveport, November 18, 1954
Dr. Leon John Menville, New Orleans, January 24, 1955
Dr. Raymond Francis Mulligan, Covington, October 7, 1955
Dr. Charlie G. Pattison, Marthaville, September 29, 1955
Dr. Winston B. Singletary, Baton Rouge, January 12, 1955
Dr. Risdon Ernest Smith, Minden, March 25, 1955
Dr. Guy Stanhope St. Amant, Gonzales, May 26, 1955
Dr. Roger Allen Tharp, Mansfield, October 2, 1955
Dr. Joseph William Watson, Baton Rouge, September 8, 1955
Dr. Joseph Whitaker, St. Joseph, December 14, 1954

* Not previously reported in Journal of December, 1954.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The nineteenth annual meeting of The New Orleans Graduate Medical Assembly will be held February 27, 28, 29 and March 1, headquarters at the Municipal Auditorium.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, color television, medical motion pictures, round-table luncheons and technical exhibits.

The Assembly has planned another interesting postclinical tour to follow the 1956 meeting in New Orleans. On Friday, March 2, a party composed of doctors and their families will leave New Orleans for the West Indies and Central America via plane. The itinerary includes Puerto Rico, St. Thomas, Haiti, Jamaica, Panama and Guatemala, and arrangements have been made for medical programs in the places visited. The party will arrive in Guatemala City on March 22 and an optional extension to the fascinating highlands of Guatemala has been arranged.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

FLORIDA MIDWINTER SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

The Tenth Annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held at the Sans Souci Hotel in Miami Beach the week of January 16, 1956. The lectures on Ophthalmology will be presented on January 16, 17, and 18. Those on Otolaryngology on January 19, 20, and 21. A midweek feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 18, to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8 p. m. on Wednesday. The schedule has been changed to provide a maximum time for recreation each afternoon.

AMERICAN RHINOLOGIC SOCIETY

Dr. Ralph H. Riggs, Shreveport, who was one of the five charter members of the American Rhinologic Society, was elected President for the coming year at a recent meeting of the Society.

DISEASES OF THE SKIN

The second annual one-day course, stressing diagnosis and management of a few of the more common skin diseases, will be held at L.S.U. School of Medicine on Saturday, January 21, 1956 from 9 a. m. to 4 p. m. Cases will be presented and discussed by members of the Department of Dermatology. There will be no didactic lectures. Registration fee is $10.00. Those interested please contact the Department of Dermatology, L.S.U. School of Medicine, New Orleans.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled examination (Part I), written examination and review of case histories, for all candidates will be held in various cities of the United States, Canada, and military centers outside the continental United States, on Friday, February 3, 1956.

Case Abstracts numbering 20 are to be sent by the candidate to the Secretary as soon as possible after receiving notification of eligibility to the Part I written examination.

For further information contact Robert L.

Faulkner, M. D., 2105 Adelbert Road, Cleveland 6, Ohio.

INTERNATIONAL ACADEMY OF PROCTOLOGY
1955 - 1956 AWARD CONTEST

The International Academy of Proctology announces its Annual Cash Prize and Certificate of Merit Award Contest for 1955-1956. The best unpublished contribution on proctology or allied subjects will be awarded $100.00 and a Certificate of Merit. Certificates will be awarded also to physicians whose entries are deemed of unusual merit. This competition is open to all physicians in all countries, whether or not affiliated with the International Academy of Proctology. The winning contribution will be selected by a Board of impartial judges, and all decisions are final.

The formal award of the First Prize, and presentation of other Certificates, will be made at the Annual Convention Dinner Dance of the International Academy of Proctology, April 26, 1956, at The Drake, Chicago, Illinois.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, "The American Journal of Proctology". All entries are limited to 5,000 words, must be typewritten in English, and submitted in five copies. All entries must be received no later than the first day of February, 1956. Entries should be addressed to the International Academy of Proctology, 147-41 Sanford Avenue, Flushing, New York.

BOOK REVIEWS

The Pyramidal Tract: Its Status in Medicine; by A. M. Lassek, M. D., Springfield, Illinois, Charles C Thomas, 1954, Pp. 166, Price $4.75.

This lucidly written and well published tract is an amplification for the general medical audience of a paper by the same author written for the Association for Research in Nervous and Mental Disease meeting, in 1948. The basis of the work is the brilliant observation that only two or three per cent of the pyramidal tract is made up of large fibers, which probably have origin in the large cells of the central cortex commonly called Betz cells. The origin of the small fibers making up 95 per cent of the pyramidal tract has not been conclusively established, though much of it is cortical in origin, between Brodmann areas 1 through 7. Neuroanatomists never intended the idea that the pyramidal tract should be associated with Betz cells exclusively, as the noncommittal name "pyramidal" would suggest. However, many anatomists writing for medical students have until recently used the two words synonymously, perhaps because of the unfortunate synonym "pyramidal cells" for Betz cells because of the triangular appearance in section. The problem is complicated by the fact that there is a tendency to fail to distinguish between extrapyramidal and pyramidal in simplified clinical discussions of such general regions as the "motor cortex," "internal capsule," and the "lateral columns." It is, of course, only in the medullary pyramid that the pyramidal tracts are reasonably well separated from the extrapyramidal fibers. The remainder of this volume concerns itself with the history of various techniques of investigating the pyramidal tract. Some of these have been considered in somewhat greater detail in the definitive monograph *The Precentral Motor Cortex,* (Illinois Monographs on Medical Science, Volume IV 1944. P. C. Bucy, Editor.) There are some further studies presented in this monograph concerning the pathology of the pyramidal tract of current interest.

W. Randolph Page, M. D.

The Clinical Physiology of the Lungs; by Cecil K. Drinker, M. D., Springfield Illinois, Charles C Thomas, 1954, Pp. 84, Price $5.50.

In this stimulating monograph, the emphasis is placed upon the structural basis for the ventilatory and circulatory adaptations within the lungs. The author uses clinical and experimental situations, such as infarction, pulmonary congestion and edema and artificial respiration to clearly illustrate the action of the five basic pulmonary structural units: arteries; veins and capillaries; bronchi and bronchioles; nerves; and lymphatics. He shows that many of the functional reactions within the lungs are locally controlled but does not neglect central nervous regulation. The size of the work precludes discussion of chemical regulation of ventilation, gas exchange, and pulmonary function tests. However, since the book is excellent as well as brief, it can be strongly recommended as an important aid to the understanding and treatment of pulmonary and cardiac disorders.

Morton M. Ziskind, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., N. Y.: Polio Pioneers; The Story of the Fight Against Polio, by Dorothy and Philip Sterling.

The C. V. Mosby Co., St. Louis: Pathology Seminars, by Lauren V. Ackerman, M. D., Arthur C. Allen, M. D., Colonel J. E. Ash, M. D., Arthur Purdy Stout, M. D., and Rupert A. Willis, M. D.

W. B. Saunders Company, Phila.: The Relief of Symptoms, by Walter Modell, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: The Pediatric Years: A Guide in Pediatrics for Workers in Health, Education and Welfare, by Louis Spekter, M. D.

University of Florida Press, Gainesville: Planning Florida's Health Leadership: Medical Education in the University, edited by Louis J. Maloof (Vol. 5).

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1. Ruffin, J. M.; Baylin, G. J.; Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, Gastroenterology *23*:252 (Feb.) 1953.

2. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, Gastroenterology *25*:416 (Nov.) 1953.

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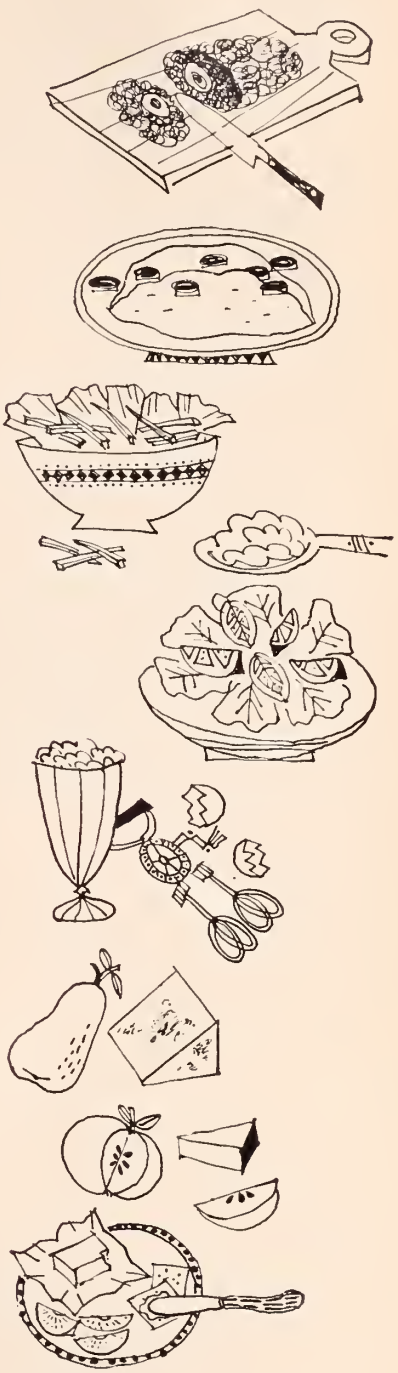
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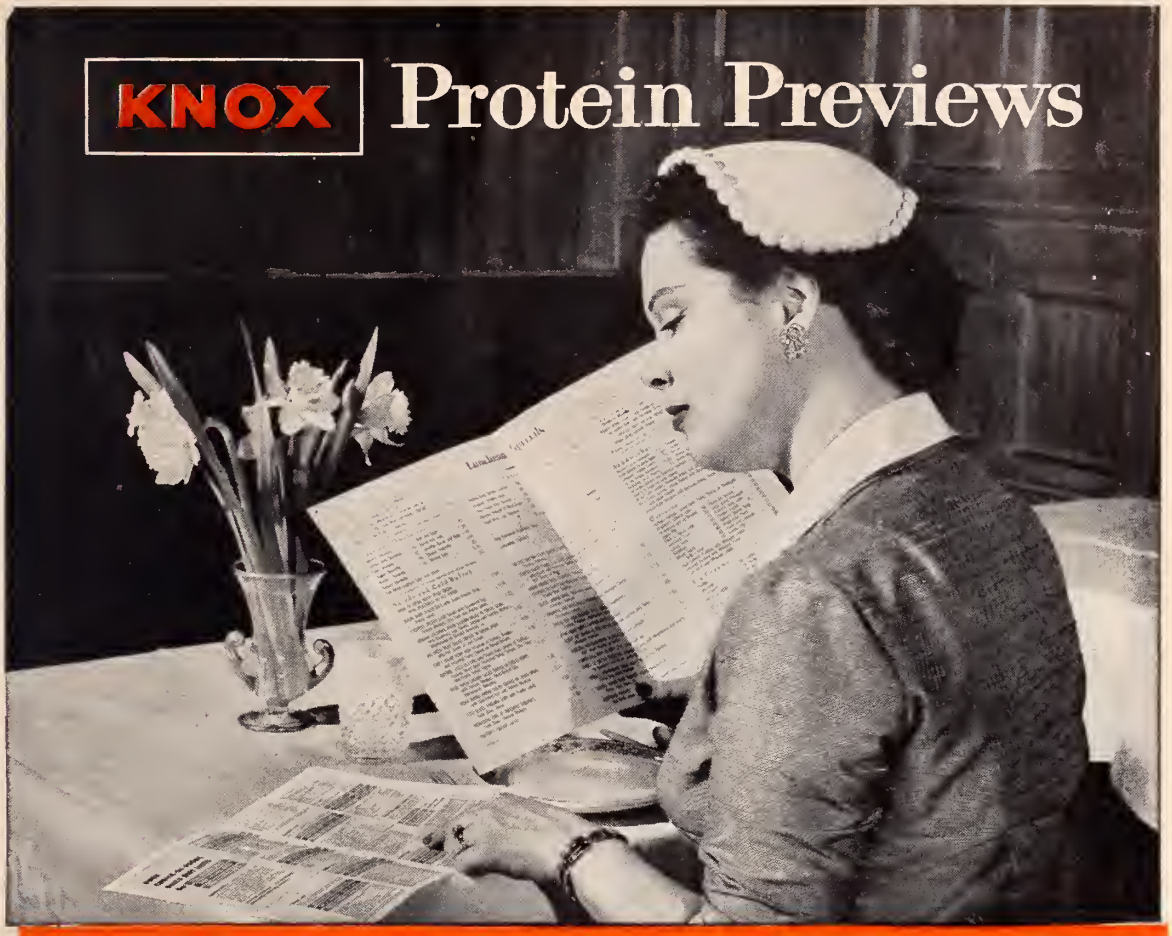
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*Georges Ray, Vins de France, Paris, University Press, 1946 (p. 75).



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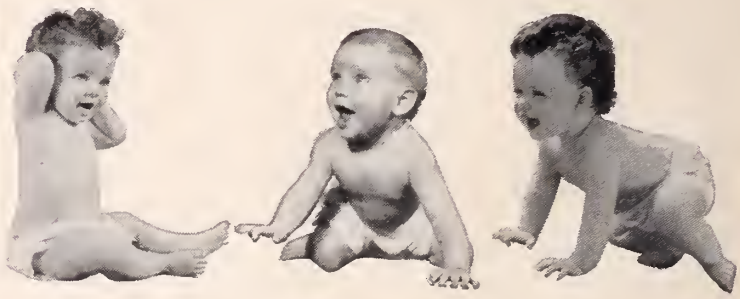
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(1) Jeans, P. C., in A. M. A. Handbook of Nutrition, ed. 2, Philadelphia, Blakiston, 1951, pp. 275-278.

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